SUGAR BULLETIN No. 28

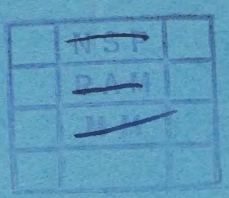
DEPARTMENT OF AGRICULTURE,
BRITISH GUIANA.

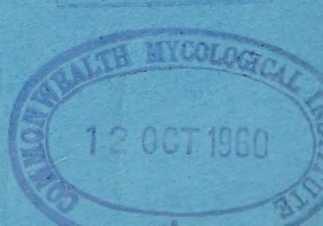
FIELD EXPERIMENTS WITH SUGAR CANE, XXVIII

THE VARIETY AND FERTILIZER POSITION OF THE SUGAR INDUSTRY, XXV.

REPORT ON THE SUGAR EXPERIMENT STATIONS FOR THE YEAR 1959.

THE "DAILY CHRONICLE," LTD., GEORGETOWN, DEMERARA,
1960.





SUGAR BULLETIN No. 28

DEPARTMENT OF AGRICULTURE,
BRITISH GUIANA.

FIELD EXPERIMENTS WITH SUGAR CANE. XXVIII

THE VARIETY AND FERTILIZER POSITION OF THE SUGAR INDUSTRY. XXV.

REPORT ON THE SUGAR EXPERIMENT STATIONS FOR THE YEAR 1959.

THE "DAILY CHRONICLE," LTD., GEORGETOWN, DEMERARA,
1960.

Digitized by the Internet Archive
in 2025

https://archive.org/details/sugar-bulletin-department-of-agriculture-british-guiana_1959_28

TABLE OF CONTENTS.

	PAGE
FIELD EXPERIMENTS WITH SUGAR CANE XXVIII	1
INTRODUCTION	1
RAINFALL	1
1. VARIETY TRIALS	2
Variety Sorting Trials	2
Plant Cane Variety Trials	14
Demerara Frontland Clay	15
Berbice Frontland Clay	19
Riverside Clay	20
Pegassy Clay	21
First Ratoon Variety Trials	23
Demerara Frontland Clay	24
Berbice Frontland Clay	27
Pegassy Clay	28
Second Ratoon Variety Trials	30
Demerara Frontland Clay	31
Berbice Frontland Clay	36
Riverside Clay	38
Pegassy Clay	39
Variety Performance Summary	40
Standard Canes	40
Barbados and Demerara Seedlings produced prior to the 1948 Series	40
Barbados Seedlings of the 1949 and 1950 Series	42
Barbados Seedlings of the 1951, 1952, 1953 and 1954 Series	46
Demerara Seedlings	51

TABLE OF CONTENTS—(Contd.).

	PAGE
Demerara-Barbados Seedlings	53
Varieties of Other Countries	54
General Summary and Recommendations	57
2. CULTIVATION EXPERIMENTS	59
3. LIMING EXPERIMENTS	61
Summary of Results of 1955-59 Series of Liming Trials	61
THE VARIETY AND FERTILIZER POSITION OF THE SUGAR INDUSTRY, XXV.	70
COMMERCIAL YIELDS, 1959	70
VARIETAL COMPOSITION OF THE 1959 HARVEST	71
ACREAGES IN THE VARIOUS VARIETIES SCHEDULED FOR REAPING IN 1960	71
THE CHANGING VARIETY PATTERN	72
CYCLE AGE OF THE CROPS	72
FERTILIZERS	75
REPORT ON THE SUGAR EXPERIMENT STATIONS FOR THE YEAR 1959	77
COMMITTEE	77
RESEARCH SUB-COMMITTEE	78
STAFF	78
EXPERIMENTS	79
SEEDLINGS INTRODUCED, ETC.	79
FINANCE	80
MISCELLANEOUS	80
ACKNOWLEDGEMENTS	82

FIELD EXPERIMENTS WITH SUGAR CANE, XXVIII.

INTRODUCTION

The field experiments reaped in 1959 consisted of seventy-nine (79) Cane Variety Experiments, two (2) experiments involving fertilizers and limestone and one (1) experiment on cultivation methods.

RAINFALL.

The rainfall at the Sugar Experiment Station during 1959 was 10.48 inches below the average over the period 1921—1958. Nevertheless, except for June in which the rainfall was probably in excess of the optimum, the rainfall was well distributed and growing conditions were favourable. The poor growth of the previous Autumn when the rainfall was very deficient could not be recovered however, although the 1959 yields at the Experiment Station were good.

A comparison of the monthly rainfall at the Sugar Experiment Station for 1959 with the average over the period 1921—1958 is given in the table below.

Comparison of the Monthly Rainfall at Sophia Experiment Station for 1959 with the average for 1921—1958.

Month.	Actual Rainfall 1959. Inches.	Average Rainfall 1921—1958. Inches.	Excess or Deficit. Inches.
January	5.75	10.31	— 4.56
February	2.52	4.96	— 2.44
March	1.61	4.91	— 3.30
April	3.46	7.15	— 3.69
May	7.10	12.55	— 5.45
June	24.28	14.72	9.56
July	9.48	11.64	— 2.16
August	10.29	7.93	2.36
September	2.02	3.36	— 1.34
October	6.39	3.88	2.51
November	7.74	6.28	1.46
December	10.59	14.02	— 3.43
Total	91.23	101.71	—10.48

1. VARIETY TRIALS, 1959.

BY

L. S. BIRKETT, *Sugar Agronomist,*

AND

C. CAMERON, *Field Manager.*

The results of the 1959 series of Variety Trials are presented and discussed under the following captions:—

A. Variety Sorting Trials.

B. Plant Cane Variety Trials.

C. First Ratoon Variety Trials.

D. Second Ratoon Variety Trials.

E. Variety Performance Summary.

F. General Summary and Recommendations.

A. VARIETY SORTING TRIALS.

Nineteen (19) Variety Sorting Trials were reaped in 1959 and are classified according to cycle, series, soil type and location as follows:—

SORTING TRIALS, 1959.

Cycle.	Series.	Soil Type.	Location.	Index Nos. of Trials.
Plants	B. 1954 Series	Clay Soil	Sophia	213.
	B. 1954 Series	Pegassy Clay	Uitvlugt	214.
	D.B. 1955 Series	Clay Soil	Sophia	215, 216. 217
	D. 1955 Series	Clay Soil	Sophia	218.
First Ratoon ..	B. 1952 Series	Pegassy Clay	Uitvlugt	196
	B. 1953 Series	Pegassy Clay	Wales	197
	B. 1953 Series	Clay Soil	Sophia	191, 192.
	D.B. 1954 Series	Clay Soil	Sophia	193, 194, 195
Second Ratoon ..	B. 1952 Series	Clay Soil	Sophia	156, 157.
	D.B. 1953 Series	Clay Soil	Sophia	158, 159, 160 161.

The results of the above sorting trials are presented in Table I.

TABLE I.—**Results of Plant Cane "Variety Sorting" Trials on Demerara Frontland Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre.		Trial No.
					Tons.	% Mean.	
Sophia, Field 10 West "B". Reaped 10.4.59 at 12.75 months. Rainfall:—73.99 inches.							
MEANS OF 5 PLOTS:	B. 54277	47.90	16.31	88.7	7.81	131.48	213
	***B. 41227**	**43.84**	**17.11**	**88.6**	**7.50**	**126.26**	
	B. 5411	41.95	17.56	90.8	7.37	124.07	
	B. 54281	40.67	16.21	90.2	6.59	110.94	
	B. 5490	39.25	16.75	90.0	6.58	110.77	
	B. 54262	41.96	14.98	86.5	6.28	105.72	
	B. 54163	39.90	15.62	84.4	6.23	104.88	
	B. 54142	37.08	16.36	87.2	6.07	102.19	
	B. 54243	41.26	14.15	80.4	5.84	98.32	
	B. 5480	33.68	17.07	89.5	5.75	96.80	
	B. 5463	39.01	14.59	80.5	5.69	95.79	
	B. 54172	33.47	16.33	89.2	5.47	92.09	
	B. 5401	33.66	15.84	86.7	5.33	89.73	
	B. 54215	32.32	15.30	86.1	4.95	83.33	
	B. 54235	31.60	15.02	86.5	4.74	79.80	
	B. 54237	30.19	15.16	83.8	4.58	77.10	
	B. 54193	28.70	14.78	84.2	4.24	71.38	
	Mean :				5.94	100.00	
	Significant Difference, 20 : 1 :				.82	13.80	
Sophia, Field 16 West "A". Reaped 25.3.59 at 13.00 months. Rainfall:—76.28 inches.							
MEANS OF 5 PLOTS:	***B. 41227**	**43.61**	**15.85**	**88.5**	**6.91**	**126.79**	215
	D.B. 6/55	42.58	15.60	89.1	6.64	121.83	
	D.B. 5/55	44.45	14.58	88.5	6.48	118.90	
	D.B. 10/55	42.44	15.24	89.7	6.47	118.72	
	D.B. 9/55	41.41	15.10	89.7	6.25	114.68	
	D.B. 57/55	39.50	14.53	87.3	5.74	105.32	
	D.B. 7/55	38.41	14.61	90.6	5.61	102.94	
	D.B. 8/55	38.63	13.97	87.1	5.40	99.08	
	D.B. 44/55	36.62	14.30	86.5	5.23	95.96	
	D.B. 59/55	32.28	15.83	89.0	5.11	93.76	
	D.B. 13/55	39.06	13.05	85.7	5.10	93.58	
	D.B. 20/55	32.69	14.69	88.7	4.80	88.07	
	B. 52315	31.72	14.99	85.8	4.75	87.16	
	D.B. 4/55	42.12	11.15	77.6	4.70	86.24	
	D.B. 1/55	33.99	13.78	85.3	4.68	85.87	
	N.Co. 300	32.34	14.07	87.6	4.55	83.49	
	D.B. 24/55	33.59	12.72	88.5	4.27	78.35	
	Mean :				5.45	100.00	
	Significant Difference, 20 : 1 :				.79	14.50	

*Standard Cane.

TABLE I. (Contd.)—**Results of Plant Cane "Variety-Sorting" Trials on Demerara Frontland Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre, Tons.	Sucrose in Cane per Acre, % Mean.	Trial No.
	Sophia, Field 10 West "A". Reaped 14.4.59 at 12.75 months. Rainfall:—74.28 inches.						
MEANS OF 5 PLOTS:	***B. 41227**	**49.71**	**16.06**	**87.2**	**7.98**	**134.34**	217
	D.B. 162/55	46.74	15.82	88.7	7.39	124.41	
	D.B. 33/55	43.70	16.28	90.4	7.11	119.70	
	D.B. 101/55	45.70	14.76	87.0	6.74	113.47	
	D.B. 154/55	48.55	13.67	86.8	6.64	111.78	
	B. 54253	40.74	16.10	88.4	6.56	110.44	
	D.B. 49/55	43.92	14.85	87.9	6.52	109.76	
	D.B. 139/55	40.91	15.79	88.5	6.46	108.75	
	D.B. 137/55	40.59	14.30	87.3	5.80	97.64	
	D.B. 90/55	38.08	15.17	87.3	5.78	97.31	
	B. 5449	35.02	16.45	88.3	5.76	96.97	
	D.B. 123/55	43.44	12.77	85.4	5.55	93.43	
	D.B. 124/55	32.79	14.81	87.6	4.86	81.82	
	D.B. 71/55	30.29	15.78	88.4	4.78	80.47	
	D.B. 99/55	29.44	15.02	85.4	4.42	74.41	
	D.B. 151/55	36.82	11.72	84.8	4.32	72.73	
	D.B. 68/55	27.81	15.29	89.0	4.25	71.55	
	Mean:				5.94	100.00	
	Significant Difference, 20: 1:				1.10	18.52	
	Sophia, Field 6 West "B". Reaped 17.4.59 at 12.25 months. Rainfall:—70.36 inches.						
MEANS OF 5 PLOTS:	D. 26/52	50.92	17.09	92.6	8.70	126.45	216
	***B. 41227**	**51.93**	**15.82**	**91.1**	**8.22**	**119.48**	
	D.B. 166/55	46.54	15.74	90.3	7.33	106.54	
	D.B. 154/55	51.70	13.73	88.0	7.10	103.20	
	D.B. 170/55	47.10	14.93	87.6	7.02	102.03	
	D. 44/52	42.81	15.91	89.6	6.81	98.98	
	D.B. 167/55	41.38	15.68	88.1	6.49	94.33	
	D. 45/52	44.07	14.73	86.9	6.49	94.33	
	D.B. 13/55	52.17	12.34	86.1	6.44	93.60	
	D.B. 84/55	42.89	14.79	84.6	6.34	92.15	
	D.B. 85/55	40.97	14.63	88.9	5.99	87.06	
	D.B. 89/55	38.92	14.52	87.8	5.65	82.12	
	Mean:				6.88	100.00	
	Significant Difference, 20: 1:				.88	12.79	

*** Standard Cane.**

TABLE I. (Contd.) —**Results of Plant Cane "Variety-Sorting" Trials on Demerara Frontland Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre.		Trial No.
					Tons.	% Mean.	
	Sophia, Field 16 East "B". Reaped 24.4.59 at 11.25 months. Rainfall:—53.95 inches.						
MEANS OF 4 PLOTS:	D. 245/55	47.29	14.77	87.0	6.99	117.68	218
	***B. 41227**	**40.46**	**16.87**	**92.1**	**6.83**	**114.98**	
	D. 50/54	44.70	15.16	88.9	6.78	114.14	
	D. 201/55	43.27	15.23	87.1	6.59	110.94	
	D. 248/55	47.80	13.63	86.0	6.52	109.76	
	D. 278/55	42.32	15.13	89.0	6.41	107.91	
	D. 239/55	45.66	14.00	85.1	6.39	107.58	
	D. 202/55	48.17	13.20	90.7	6.36	107.07	
	D. 249/55	41.00	15.45	91.6	6.33	106.57	
	D. 238/55	46.66	13.26	89.2	6.19	104.21	
	D. 214/55	41.96	14.64	89.7	6.14	103.37	
	D. 236/55	41.54	14.60	88.6	6.07	102.19	
	D. 219/55	38.97	15.40	90.5	6.00	101.01	
	D. 207/55	38.97	15.31	92.0	5.97	100.50	
	D. 240/55	39.09	14.92	89.0	5.83	98.15	
	D. 180/55	34.99	16.64	92.8	5.82	97.98	
	D. 267/55	39.38	14.54	89.2	5.73	96.46	
	D.B. 13/55	40.98	13.94	88.8	5.71	96.13	
	D. 203/55	36.57	14.40	88.8	5.27	88.72	
	D.B. 101/55	40.87	12.86	83.8	5.26	88.55	
	D. 246/55	44.06	11.79	81.7	5.20	87.54	
	D. 242/55	40.94	12.39	85.7	5.07	85.35	
	D. 195/55	34.37	14.64	88.3	5.03	84.68	
	D. 253/55	38.37	13.07	86.6	5.01	84.34	
	D. 255/55	39.65	12.41	86.6	4.92	82.83	
	Mean:				5.94	100.00	
	Significant Difference, 20: 1:				.96	16.16	

* **Standard Cane.**

TABLE I (Contd.)—**Results of First Ratoon "Variety Sorting" Trials on Demerara Frontland Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre. Tons.	Sucrose in Cane per Acre. % Mean.	Combined results for 2 Crops, Plants and 1st Ratoons. Variety.	Combined results for 2 Crops, Plants and 1st Ratoons. Sucrose in Cane per Acre. Tons.	Trial No.
	Sophia, Field 2 West "B". Reaped 1.4.59 at 12.75 months. Rainfall :—75.23 inches.								
MEANS OF 5 PLOTS:	B. 53227	41.45	16.68	89.3	6.91	122.30	B. 53227	14.18	192
	***B. 41227**	**44.20**	**14.94**	**85.9**	**6.60**	**116.81**	***B. 41227**	**13.64**	
	B. 53200	43.16	14.53	84.9	6.27	110.97	B. 53200	12.98	
	B. 5321	40.16	13.96	86.1	5.61	99.29	B. 5321	12.00	
	B. 53348	38.62	14.29	86.9	5.52	97.70	B. 53348	11.97	
	B. 53329	36.52	14.93	85.7	5.45	96.46	B. 5398	11.81	
	B. 5398	38.33	13.65	85.3	5.23	92.57	B. 53329	11.48	
	B. 5352	36.85	13.91	85.9	5.13	90.80	B. 53122	11.03	
	B. 53122	37.95	13.51	84.6	5.12	90.62	B. 5352	10.84	
	B. 53320	36.11	12.94	80.7	4.67	82.65	B. 53320	10.09	
	Mean:				5.65	100.00			
	Significant Difference, 20: 1:				.49	8.67			
	Sophia, Field 2 West "A". Reaped 2.4.59 at 13.00 months. Rainfall:—75.23 inches.								
MEANS OF 4 PLOTS.	***B. 41227**	**38.85**	**14.36**	**87.2**	**5.58**	**118.72**	***B. 41227**	**13.08**	191
	B. 53261	38.58	14.46	85.1	5.58	118.72	B. 53365	11.53	
	B. 53365	35.97	14.70	86.2	5.29	112.55	B. 53261	11.26	
	B. 53355	39.90	12.52	81.7	5.00	106.38	B. 53355	11.08	
	B. 53165	35.50	13.67	82.7	4.85	103.19	B. 53267	10.61	
	B. 52371	33.89	14.28	87.3	4.84	102.98	B. 53218	10.23	
	B. 53267	32.04	15.01	87.9	4.81	102.34	B. 53165	10.22	
	B. 53362	34.30	14.02	83.8	4.81	102.34	B. 52371	10.98	
	B. 53218	32.66	12.78	83.8	4.17	88.72	B. 53362	9.64	
	B. 53317	13.86	14.69	87.7	2.04	43.40	B. 53317	7.85	
	Mean:				4.70	100.00			
	Significant Difference, 20: 1:				.75	15.96			

* **Standard Cane.**

TABLE I. (Contd.) —Results of First Ratoon "Variety Sorting" Trials on Demerara Frontland Clay.

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre,		Combined results for 2 Crops, Plants and 1st Ratoons.		Trial No.
					Tons.	% Mean.	Variety.	Sucrose in Cane per Acre, Tons.	
	Sophia, Field 12 East "A". Reaped 25.8.59 at 12.25 months Rainfall:—73.53 inches.								
MEANS OF 5 PLOTS:	D.B. 125/54	40.55	13.76	88.5	5.58	137.10	D.B. 125/54	14.77	193
	D.B. 23/54	40.14	12.36	86.9	4.96	121.87	D.B. 80/54	12.50	
	D.B. 7/54	41.64	11.61	82.4	4.84	118.92	***B. 41227**	**12.49**	
	D.B. 81/54	36.78	12.72	85.5	4.68	114.99	D.B. 81/54	12.43	
	D.B. 13/54	36.35	12.84	86.4	4.67	114.74	D.B. 7/54	12.37	
	D.B. 76/54	36.44	12.50	84.4	4.55	111.79	D.B. 13/54	12.06	
	***B. 41227**	**34.78**	**12.73**	**85.4**	**4.43**	**108.85**	D.B. 77/54	11.94	
	D.B. 6/54	40.65	10.53	83.5	4.28	105.16	D.B. 6/54	11.67	
	D.B. 80/54	35.43	11.98	84.0	4.25	104.42	D.B. 76/54	11.54	
	D.B. 77/54	34.39	12.02	84.0	4.13	101.47	D.B. 23/54	11.36	
	D.B. 94/54	34.64	11.61	81.8	4.02	98.77	D. 49/54	11.20	
	D.B. 65/54	34.78	11.43	77.2	3.97	97.54	D.B. 88/54	11.05	
	D.B. 88/54	33.33	11.83	84.2	3.94	96.81	D.B. 65/54	10.84	
	D. 49/54	38.41	10.03	79.7	3.85	94.59	D.B. 61/54	10.46	
	D.B. 83/54	30.99	12.38	84.9	3.84	94.35	D.B. 83/54	10.44	
	D.B. 12/54	34.41	10.95	82.6	3.77	92.63	D.B. 94/54	10.11	
	D.B. 61/54	31.70	11.74	82.2	3.72	91.40	D.B. 12/54	9.91	
	D.B. 40/54	26.47	13.44	86.7	3.56	87.47	D.B. 29/54	9.67	
	D.B. 29/54	23.69	13.73	88.0	3.25	79.85	D.B. 40/54	8.66	
	D.B. 35/54	21.27	12.42	84.8	2.64	64.86	D.B. 35/54	7.58	
	D.B. 32/54	23.10	11.05	82.8	2.55	62.65	D.B. 32/54	7.51	
	Mean:				4.07	100.00			
	Significant Difference, 20: 1:				.70	17.20			
	Sophia, Field 9 West "B". Reaped 27.8.59 at 12.25 months. Rainfall:—73.49 inches.								
MEANS OF 5 PLOTS:	***B. 41227**	**40.82**	**12.37**	**85.6**	**5.05**	**124.69**	D.B. 9/54	13.95	194
	D.B. 9/54	46.47	10.69	82.7	4.97	122.72	***B. 41227**	**13.32**	
	D. 50/54	41.61	11.92	85.2	4.96	122.47	D. 50/54	12.89	
	D.B. 18/54	40.53	11.72	84.8	4.75	117.28	D. 53/54	12.08	
	D. 53/54	41.80	10.87	81.7	4.54	112.10	D.B. 18/54	11.31	
	D.B. 21/54	32.81	12.77	87.1	4.19	103.46	D.B. 21/54	10.96	
	D.B. 71/54	33.83	11.00	82.6	3.72	91.85	D. 47/54	10.29	
	D.B. 75/54	29.34	11.15	81.2	3.27	80.74	D.B. 71/54	10.22	
	D. 47/54	24.29	12.73	86.4	3.09	76.30	D.B. 70/54	9.82	
	D.B. 70/54	28.75	10.46	82.9	3.01	74.32	D.B. 82/54	9.14	
	D.B. 82/54	29.21	10.20	80.3	2.98	73.58	D.B. 75/54	9.11	
	Mean:				4.05	100.00			
	Significant Difference, 20: 1:				.54	13.33			

*** Standard Cane.**

TABLE I (Contd.)—Results of First Ratoon "Variety Sorting" Trials on Demerara Frontland Clay.

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre.		Combined results for 2 Crops, Plants and 1st Ratoons.		Trial No.
					Tons.	% Mean.	Variety.	Sucrose in Cane per Acre, Tons.	
	Sophia, Field 9 West "A". Reaped 28.8.59 at 12.25 months.								
	Rainfall:—73.49 inches.								
MEANS OF 5 PLOTS:	D. 51/54	52.06	10.33	81.6	5.38	122.83	***B. 41227**	**13.69**	195
	***B. 41227**	**44.70**	**11.91**	**83.8**	**5.33**	**121.69**	D.B. 131/54	13.55	
	D.B. 68/54	40.16	13.07	86.0	5.25	119.86	D.B. 197/54	13.03	
	D.B. 197/54	40.08	12.13	84.7	4.86	110.96	D.B. 68/54	12.87	
	D.B. 172/54	35.33	13.26	88.7	4.69	107.08	D. 51/54	12.18	
	D.B. 163/54	39.19	11.82	83.6	4.64	105.94	D.B. 163/54	11.88	
	D.B. 2/54	37.73	12.24	84.3	4.62	105.48	D.B. 2/54	11.88	
	D.B. 131/54	39.86	11.33	85.2	4.51	102.97	D.B. 172/54	11.68	
	D.B. 1/54	36.90	9.69	81.2	3.58	81.74	D.B. 1/54	10.69	
	D.B. 156/54	31.08	10.43	81.8	3.24	73.97	D.B. 156/54	9.83	
	D.B. 154/54	22.05	9.51	79.8	2.10	47.95	D.B. 154/54	8.13	
	Mean:				4.38	100.00			
	Significant Difference, 20: 1:				.60	13.70			

*** Standard Cane.**

TABLE I. (Contd.)—**Results of Second Ratoon "Variety-Sorting" Trials on Demerara Frontland Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre, Tons.	Sucrose in Cane per Acre, % Mean.	Combined Results for 3 Crops, Plants, 1st and 2nd Ratoons. Variety.	Combined Results for 3 Crops, Plants, 1st and 2nd Ratoons. Sucrose in Cane per Acre. Tons.	Trial No.
	Sophia, Field 9 East "B". Reaped 17.3.59 at 11.75 months. Rainfall:—72.65 inches.								
MEANS OF 4 PLOTS:	B. 52158	35.21	16.85	89.4	5.93	138.23	B. 52158	19.00	156
	***B 41227**	**34.44**	**17.18**	**90.0**	**5.91**	**137.76**	***B 41227**	**18.06**	
	B. 5277	32.81	16.28	91.9	5.34	124.48	B. 52144	16.72	
	B. 52135	30.75	16.72	92.4	5.14	119.81	B. 5213	16.67	
	B. 5213	29.07	16.30	90.3	4.74	110.49	B. 5277	16.39	
	B. 52144	28.85	16.38	91.3	4.72	110.02	B. 52316	16.07	
	B. 5235	27.98	15.22	90.1	4.26	99.30	B. 5235	15.98	
	B. 52214	25.73	15.79	86.7	4.06	94.64	B. 52135	15.09	
	B. 52316	25.85	15.21	88.3	3.93	91.61	H. 39–3633	13.79	
	B. 5212	23.28	16.83	91.1	3.92	91.38	B. 5212	13.23	
	B. 52256	27.96	13.89	84.6	3.88	90.44	B. 52341	13.23	
	B. 52389	24.04	15.04	87.7	3.61	84.15	B. 52389	13.18	
	H. 39–3633	26.34	13.27	84.3	3.50	81.58	B. 52256	13.02	
	B. 52341	24.51	14.01	88.4	3.43	79.95	B. 52214	12.72	
	B. 52306	14.07	14.43	84.9	2.03	47.32	B. 52306	9.84	
	Mean :				4.29	100.00			
	Significant Difference, 20 : 1 :				.97	22.61			
	Sophia, Field 9 East "C". Reaped 19. 3. 59 at 11.50 months. Rainfall:—72.25 inches.								
MEANS OF 4 PLOTS.	H. 38–2915	34.83	16.97	94.7	5.91	144.85	***B. 41227**	**19.40**	157
	B. 52257	31.60	18.25	91.0	5.77	141.42	H. 38–2915	18.19	
	***B. 41227**	**33.97**	**16.95**	**90.9**	**5.76**	**141.18**	B. 52107	18.09	
	B. 5121	36.57	15.51	87.4	5.67	138.97	B. 52253	17.78	
	B. 52107	32.33	16.56	89.0	5.35	131.13	B. 52257	17.77	
	H. 39–7028	29.03	15.23	89.6	5.18	126.96	B. 5121	17.32	
	B. 51311	29.08	17.03	91.7	4.95	121.32	H. 44–3098	16.74	
	H. 44–3098	33.03	14.30	85.8	4.72	115.69	B. 51311	16.66	
	B. 52222	29.45	15.67	88.2	4.62	113.24	H. 39–7028	16.35	
	P.R. 1000	31.11	14.86	86.9	4.61	112.99	B. 52222	16.22	
	B. 52253	29.07	15.56	91.4	4.52	110.78	B. 52321	15.35	
	B. 52315	25.99	16.15	89.9	4.20	102.94	B. 52315	15.10	
	B. 52321	23.68	17.23	94.8	4.08	100.00	B. 52162	14.53	
	B. 51105	25.77	15.57	87.7	4.01	98.28	B. 5124	14.07	
	B. 52162	27.29	14.11	86.9	3.85	94.36	B. 51105	13.52	
	H. 38–4443	29.64	12.93	82.0	3.83	93.87	P.R. 1000	12.79	
	B. 5124	19.45	17.43	90.9	3.39	83.09	H. 38–4443	12.58	
	B. 52242	20.91	15.87	86.9	3.32	81.37	B. 52242	11.69	
	H. 37–1933	21.29	13.67	85.2	2.91	71.32	H. 37–1933	11.56	
	B. 52184	16.29	16.30	90.0	2.65	64.95	B. 52184	11.39	
	B. 52298	17.12	15.51	89.8	2.65	64.95	H. 39–5803	11.14	
	C.P. 34–79	18.99	13.53	81.1	2.57	62.99	B. 52298	10.94	
	H. 39–5803	16.02	15.85	88.0	2.54	62.25	C.P. 44–155	9.42	
	C.P. 44–155	17.84	13.91	84.4	2.48	60.78	C.P. 34–79	9.25	
	F. 36–819	17.60	13.67	84.5	2.40	58.82	F. 36–819	8.86	
	Mean:				4.08	100.00			
	Significant Difference, 20: 1:				.87	21.32			

*** Standard Cane.**

TABLE I. (Contd.)—**Results of Second Ratoon "Variety Sorting" Trials on Demerara Frontland Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre. Tons.	Sucrose in Cane per Acre. % Mean.	Combined results for 3 Crops, Plants, 1st & 2nd Ratoons. Variety.	Combined results for 3 Crops, Plants, 1st & 2nd Ratoons. Sucrose in Cane per Acre, Tons.	Trial No.
	Sophia, Field 4 West "B". Reaped 10.9.59 at 12.00 months.								
	Rainfall:—75.13 inches.								
MEANS OF 5 PLOTS:	N.Co. 330	41.13	14.46	88.1	5.95	129.91	***B. 41227**	**19.91**	158
	D.B. 85/53	51.48	11.21	79.8	5.77	125.98	D.B. 255/53	19.86	
	D.B. 255/53	38.04	14.75	89.8	5.61	122.49	N.Co. 330	19.83	
	***B. 41227**	**39.16**	**14.20**	**87.7**	**5.56**	**121.40**	B. 52178	18.39	
	B. 52178	39.14	13.87	87.7	5.43	118.56	D.B. 85/53	18.14	
	D.B. 54/53	36.08	14.00	87.6	5.05	110.26	D.B. 54/53	16.65	
	D.B. 62/53	32.05	14.78	87.6	4.73	103.28	H. 39–5803	16.10	
	D.B. 71/53	32.52	14.48	87.1	4.71	102.84	D.B. 71/53	15.64	
	D.B. 80/53	34.62	12.86	83.7	4.45	97.16	D.B. 80/53	15.51	
	D.B. 36/53	31.03	13.88	86.8	4.31	94.10	D.B. 72/53	15.32	
	D.B. 72/53	30.35	14.07	86.3	4.27	93.23	D.B. 62/53	15.03	
	D.B. 12/53	31.18	12.82	83.6	4.00	87.34	D.B. 36/53	14.99	
	H. 38–4443	32.43	11.69	83.3	3.79	82.75	C.C. 102	14.92	
	H. 39–5803	25.52	14.33	88.8	3.66	79.91	D.B. 12/53	13.70	
	C.C. 102	28.30	12.18	85.7	3.45	75.32	H. 38–4443	12.93	
	G. 176	18.37	14.22	86.3	2.61	56.99	G. 176	10.49	
	Mean :				4.58	100.00			
	Significant Difference, 20 : 1 :				.59	12.88			
	Sophia, Field 4 West "A". Reaped 15.9.59 at 12.00 months.								
	Rainfall:—75.52 inches.								
MEANS OF 4 PLOTS:	D.B. 85/53	48.55	11.85	79.9	5.75	124.19	D.B. 85/53	22.00	159
	D.B. 164/53	43.84	13.03	86.6	5.71	123.33	***B. 41227**	**20.60**	
	***B. 41227**	**43.60**	**12.84**	**86.0**	**5.60**	**120.95**	D.B. 164/53	19.30	
	D.B. 223/53	42.54	12.48	85.1	5.31	114.69	D.B. 205/53	18.90	
	D.B. 205/53	39.95	12.72	84.6	5.08	109.72	D.B. 223/53	17.89	
	D.B. 167/53	35.52	14.19	87.9	5.04	108.86	D.B. 74/53	17.87	
	D.B. 80/53	36.85	13.46	86.1	4.96	107.13	D.B. 73/53	17.82	
	D.B. 137/53	35.66	13.88	87.6	4.95	106.91	D.B. 169/53	17.79	
	D.B. 73/53	38.15	12.88	86.7	4.91	106.05	D.B. 167/53	17.68	
	D.B. 143/53	41.57	11.71	83.1	4.87	105.18	D.B. 79/53	17.12	
	D.B. 79/53	34.65	13.70	86.5	4.75	102.59	D.B. 137/53	16.97	
	D.B. 74/53	31.62	15.01	90.7	4.74	102.38	D.B. 81/53	16.63	
	D.B. 231/53	36.13	13.10	84.9	4.73	102.16	D.B. 143/53	16.13	
	D.B. 169/53	30.94	13.99	89.0	4.33	93.52	D.B. 80/53	15.94	
	D.B. 75/53	32.18	13.18	86.8	4.24	91.58	D.B. 78/53	15.27	
	D.B. 81/53	32.94	12.66	85.0	4.17	90.06	D.B. 231/53	15.11	
	D.B. 78/53	31.18	12.28	84.9	3.83	82.72	D.B. 75/53	14.78	
	D.B. 77/53	27.20	13.97	85.9	3.80	82.07	D.B. 76/53	14.42	
	D.B. 76/53	27.42	13.70	86.0	3.76	81.21	D.B. 77/53	14.32	
	D.B. 233/53	18.13	11.77	83.2	2.13	46.00	D.B. 233/53	10.15	
	Mean :				4.63	100.00			
	Significant Difference, 20 : 1 :				.82	17.71			

*** Standard Cane.**

TABLE I. (Contd.)—Results of Second Ratoon "Variety Sorting" Trials on Demerara Frontland Clay.

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre.		Combined results for 3 Crops, Plants, 1st and 2nd Ratoons.		Trial No.
					Tons.	% Mean.	Variety.	Sucrose in Cane per Acre. Tons.	
	Sophia, Field 3 East "C". Reaped 7.10.59 at 11.75 months.								
	Rainfall:—78.34 inches.								
MEANS OF 5 PLOTS:	***B. 41227**	**49.87**	**12.97**	**84.7**	**6.47**	**145.39**	***B. 41227**	**20.43**	160
	D.B. 169/53	36.61	14.24	88.4	5.21	117.08	D.B. 172/53	17.32	
	D.B. 172/53	36.83	13.81	87.9	5.09	114.38	D.B. 169/53	16.97	
	D.B. 87/53	39.38	12.61	84.2	4.97	111.69	D.B. 87/53	15.23	
	D.B. 45/53	38.75	12.05	82.7	4.67	104.94	D.B. 231/53	15.05	
	D.B. 231/53	42.92	10.88	81.9	4.67	104.94	D.B. 167/53	14.68	
	D.B. 47/53	38.73	11.50	83.8	4.46	100.22	D.B. 45/53	14.28	
	D.B. 60/53	34.89	11.58	80.1	4.04	90.79	D.B. 47/53	13.49	
	D.B. 167/53	31.54	11.80	82.6	3.72	83.60	D.B. 233/53	13.21	
	D.B. 233/53	34.75	10.57	80.8	3.67	82.47	D.B. 60/53	12.83	
	D.B. 34/53	28.98	12.52	82.5	3.63	81.57	D.B. 34/53	12.53	
	D.B. 133/53	29.57	9.66	79.6	2.86	64.27	D.B. 133/53	9.84	
	Mean :				4.45	100.00			
	Significant Difference, 20 : 1 :				.63	14.16			
	Sophia, Field 3 East "D". Reaped 9.10.59 at 11.50 months.								
	Rainfall:—78.34 inches.								
MEANS OF 5 PLOTS:	D.B. 73/53	39.55	13.08	84.3	5.18	116.14	***B. 41227**	**19.15**	161
	B. 46364	43.36	11.81	83.0	5.12	114.80	B. 46364	17.68	
	***B. 41227**	**39.63**	**12.72**	**82.5**	**5.04**	**113.00**	D.B. 169/53	17.67	
	D.B. 80/53	39.30	11.65	84.3	4.58	102.69	D.B. 233/53	16.23	
	D.B. 62/53	34.94	12.57	82.7	4.39	98.43	D.B. 73/53	15.85	
	D.B. 167/53	37.80	11.47	81.0	4.33	97.09	D.B. 164/53	15.31	
	D.B. 54/53	36.57	11.76	84.0	4.30	96.41	D.B. 74/53	15.22	
	D.B. 74/53	31.32	13.34	85.1	4.24	95.07	D.B. 62/53	15.13	
	D.B. 85/53	49.39	8.39	71.1	4.14	92.83	D.B. 85/53	15.03	
	D.B. 164/53	39.91	10.37	79.4	4.14	92.83	D.B. 54/53	14.55	
	D.B. 233/53	36.71	11.02	78.1	4.05	90.81	D.B. 167/53	14.50	
	D.B. 169/53	31.30	12.91	86.8	4.04	90.58	D.B. 80/53	14.15	
	Mean :				4.46	100.00			
	Significant Difference, 20 : 1 :				—	—			

*** Standard Cane.**

TABLE I. (Contd.)—**Results of a Plant Cane "Variety Sorting" Trial on Pegassy Clay.**

	Variety.	Cane per Acre. Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre. Tons.	Sucrose in Cane per Acre. % Mean.	Trial No.
	Pln. De Kinderen, Field 74 W. Reaped 27.8.59. at 15.50 months. Rainfall:—109.38 inches.						
MEANS OF 4 PLOTS:	B. 54142	38.34	11.27	76.2	4.32	149.48	214
	B. 54163	30.82	12.03	82.6	3.71	128.37	
	B. 54172	28.01	12.87	86.0	3.61	124.91	
	B. 5463	32.81	10.79	79.6	3.54	122.49	
	B. 5490	31.19	11.19	79.5	3.49	120.76	
	B. 54262	33.52	10.36	77.3	3.47	120.07	
	B. 54253	29.92	11.34	79.0	3.39	117.30	
	B. 54277	29.71	11.27	77.7	3.35	115.92	
	***B. 41227**	**31.50**	**10.17**	**78.1**	**3.20**	**110.73**	
	B. 54243	28.42	10.73	77.2	3.05	105.54	
	B. 5480	28.56	10.56	79.4	3.02	104.50	
	B. 5401	26.96	9.84	74.0	2.65	91.70	
	B. 5449	23.63	10.67	77.3	2.52	87.20	
	B. 54193	25.37	8.17	69.9	2.07	71.63	
	B. 5411	26.56	7.29	65.7	1.94	67.13	
	B. 54281	22.83	7.55	68.7	1.72	59.52	
	B. 54235	17.38	8.76	74.5	1.53	52.94	
	B. 54215	23.43	6.26	65.1	1.47	50.86	
	Mean:				2.89	100.00	
	Significant Difference, 20: 1:				.57	19.72	

* **Standard Cane.**

TABLE I.—(Contd.)—**Results of First Ratoon "Variety Sorting" Trials on Pegassy Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre, Tons.	Sucrose in Cane per Acre, % Mean.	Combined results for 2 Crops, Plants and 1st Ratoons. Variety.	Combined results for 2 Crops, Plants and 1st Ratoons. Sucrose in Cane per Acre. Tons.	Trial No.
	Pln. Uitvlugt, Field 39 I.C.B.U. East. Reaped 17.3.59 at 12.25 months. Rainfall:—85.08 inches.								
	D. 141/46	41.86	14.34	87.3	6.00	160.00	B. 52315	11.93	
	B. 52315	39.23	13.89	84.1	5.45	145.33	D. 141/46	11.49	
	***B. 41227**	**37.74**	**13.07**	**84.5**	**4.93**	**131.47**	***B. 41227**	**11.21**	
	B. 5213	35.69	13.18	86.0	4.70	125.33	B. 52321	10.55	
	B. 52107	33.88	13.24	83.2	4.48	119.47	B. 52107	9.60	
	B. 52321	31.20	14.14	88.7	4.41	117.60	B. 52389	9.29	
	B. 5277	29.54	14.70	86.6	4.34	115.73	B. 5213	9.24	
	B. 5121	32.84	12.94	83.3	4.25	113.33	B. 5277	9.01	
	B. 52389	33.08	12.39	82.4	4.10	109.33	B. 5121	9.00	
	B. 52371	31.15	12.90	82.4	4.02	107.20	B. 52371	8.73	
	B. 52257	28.56	13.64	86.5	3.90	104.00	B. 5212	8.05	
	H. 39–3633	29.43	12.70	80.0	3.74	99.73	B. 52257	7.46	
	B. 52222	29.95	11.97	82.0	3.58	95.47	B. 52144	7.44	196
MEANS OF 4 PLOTS:	B. 5212	26.33	13.54	85.4	3.56	94.93	B. 52222	7.34	
	B. 52158	27.62	12.90	81.9	3.56	94.93	H. 39–3633	7.26	
	B. 52162	31.73	11.16	79.1	3.54	94.40	B. 52162	6.72	
	B. 52144	30.43	10.92	80.6	3.32	88.53	B. 52214	6.68	
	B. 52253	25.00	12.42	81.4	3.10	82.67	B. 52253	6.60	
	B. 52256	27.00	11.42	79.1	3.08	82.13	B. 5235	6.55	
	B. 52214	29.48	10.36	77.0	3.05	81.33	B. 52158	6.49	
	B. 52184	21.99	12.89	82.4	2.83	75.47	B. 52184	5.92	
	B. 5235	26.37	9.72	75.0	2.56	68.27	B. 52256	5.77	
	B. 52135	22.92	7.56	70.5	1.73	46.13	Co. 413	5.44	
	Co. 413	26.27	6.34	67.6	1.66	44.27	B. 52135	4.43	
	Mean:				3.75	100.00			
	Significant Difference, 20: 1:				.68	18.13			
	Pln. Wales, Field La. R.C. 5. Reaped 24.11.59 at 11.25 months. Rainfall:—100.20 inches.								
	B. 53218	44.74	12.81	84.9	5.73	150.39	B. 53218	12.10	
	***B. 41227**	**34.72**	**13.91**	**89.2**	**4.83**	**126.77**	***B. 41227**	**10.92**	
	B. 5178	38.53	12.47	84.6	4.80	125.98	B. 5178	10.09	
	B. 53329	30.77	14.02	89.9	4.31	113.12	B. 53348	9.97	
	B. 5352	30.52	14.10	86.9	4.30	112.86	B. 53267	9.91	
	B. 53365	34.20	12.15	84.6	4.15	108.92	B. 53365	9.37	
	B. 53227	31.05	13.22	87.0	4.10	107.61	B. 53227	9.26	
	B. 53261	32.18	12.41	84.2	3.99	104.72	B. 5352	9.09	
	B. 53267	30.79	12.94	88.0	3.98	104.46	B. 53261	8.92	
MEANS OF 4 PLOTS:	B. 50184	32.22	12.03	84.1	3.88	101.84	B. 53317	8.79	197
	B. 53348	24.22	15.29	90.6	3.70	97.11	B. 50184	8.76	
	B. 53200	30.17	12.17	82.9	3.67	96.33	B. 53329	8.75	
	B. 53355	25.25	14.20	87.4	3.58	93.96	B. 53200	8.54	
	B. 5321	27.79	12.21	85.6	3.39	88.98	B. 53320	8.39	
	B. 53320	27.62	12.23	85.7	3.38	88.71	B. 53122	7.90	
	B. 53122	23.94	13.69	89.2	3.28	86.09	B. 53355	7.84	
	B. 5398	25.11	12.70	85.9	3.19	83.73	B. 5398	7.81	
	B. 53317	22.81	12.01	85.7	2.74	71.92	B. 53362	7.81	
	B. 53165	25.72	10.34	76.1	2.66	69.82	B. 5321	7.46	
	B. 53362	21.95	11.42	83.3	2.51	65.88	B. 53165	6.40	
	Mean:				3.81	100.00			
	Significant Difference, 20: 1:				.96	25.20			

* **Standard Cane.**

B. PLANT CANE VARIETY TRIALS.

Twenty (20) Variety Trials were reaped as Plants during 1959, the results of which are presented in Table II. These experiments are classified according to soil type and locality as follows:—

Soil Type and Locality.	Index Nos. of Trials.	No. of Trials
Clays—Demerara.	219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229.	11
Clays—Berbice.	230, 231, 232.	3
Riverside Clays.	233, 234.	2
Pegassy Clay.	235. 236, 237, 238.	4

TABLE II.—**Results of Plant Cane Variety Trials on Demerara Frontland Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane	Purity.	Sucrose in Cane per Acre, Tons.	Sucrose in Cane per Acre, % Mean.	Trial No.
Sophia, Field 16 West "B". Reaped 20.3.59 at 13.00 months. Rainfall:—76.84 inches.							
MEANS OF 5 PLOTS:	***B. 41227**	**42.61**	**17.48**	**88.6**	**7.45**	**130.47**	219
	D.B. 169/53	39.98	17.37	87.2	6.94	121.54	
	H. 39–3633	41.54	15.20	87.0	6.31	110.51	
	B. 5277	39.51	15.74	86.1	6.22	108.93	
	D. 44/52	37.70	16.08	88.8	6.06	106.13	
	B. 52222	39.70	14.66	82.2	5.82	101.93	
	C.P. 44–101	40.96	13.68	82.8	5.60	98.07	
	D. 45/52	35.52	15.59	82.7	5.54	97.02	
	H. 39–5803	34.71	13.17	83.9	4.57	80.03	
	D. 55/52	27.42	15.83	82.9	4.34	76.01	
	Q. 57	26.67	14.69	81.2	3.92	68.65	
	Mean:				5.71	100.00	
	Significant Difference, 20: 1:				.63	11.03	
Sophia, Field 6 West "A". Reaped 16.4.59 at 12.25 months. Rainfall:—70.35 inches.							
MEANS OF 6 PLOTS:	***B. 41227**	**51.00**	**17.33**	**89.6**	**8.84**	**131.94**	220
	B. 34104	49.66	17.15	92.5	8.52	127.16	
	P.O.J. 2878	38.78	16.68	90.2	6.47	96.57	
	Co. 421	40.32	15.74	93.4	6.35	94.78	
	D. 625	30.39	16.57	89.0	5.03	75.07	
	Diamond 10	29.94	16.70	90.8	5.00	74.63	
	Mean:				6.70	100.00	
	Significant Difference, 20: 1:				1.08	16.12	
Sophia, Field 16 East "A". Reaped 27.4.59 at 11.25 months. Rainfall:—54.03 inches.							
MEANS OF 5 PLOTS:	B. 50135	44.26	14.97	89.0	6.63	132.07	221
	***B. 41227**	**36.78**	**16.06**	**89.8**	**5.91**	**117.73**	
	B. 42231	35.52	15.47	88.8	5.50	109.56	
	B. 46364	37.12	14.02	89.1	5.21	103.78	
	H. 39–7028	37.40	13.87	87.9	5.19	103.39	
	Q. 50	32.03	15.32	89.0	4.91	97.81	
	B. 5037	30.57	15.02	89.1	4.59	91.43	
	H. 44–3098	33.62	13.46	87.4	4.53	90.24	
	C.P. 34–79	26.36	15.81	87.9	4.17	83.07	
	F. 36–819	23.53	15.26	87.2	3.59	71.51	
	Mean:				5.02	100.00	
	Significant Difference, 20: 1:				.98	19.52	

* **Standard Cane.**

TABLE II. (Contd.)—Results of Plant Cane Variety Trials on Demerara Frontland Clay.

	Variety.	Cane per Acre, Tons	Pol. % Cane.	Purity.	Sucrose in Cane per Acre.		Trial No.
					Tons.	% Mean.	
	Sophia, Field 10 East "B". Reaped 7.8.59 at 14.00 months. Rainfall:—88.22 inches.						
MEANS OF 5 PLOTS:	B. 54142	42.02	11.47	82.3	4.82	125.85	222
	D. 202/55	41.95	10.92	79.2	4.57	119.32	
	B. 5490	36.57	11.94	84.7	4.36	113.84	
	B. 54281	36.70	10.99	84.2	4.03	105.22	
	D. 201/55	38.80	10.37	66.7	4.02	104.96	
	D. 214/55	32.12	12.43	83.7	3.99	104.18	
	B. 54277	40.33	9.75	81.2	3.93	102.61	
	D. 249/55	33.56	11.46	82.5	3.84	100.26	
	B. 54262	39.84	9.46	79.9	3.77	98.43	
	D. 195/55	30.53	12.26	82.0	3.74	97.65	
	D. 180/55	27.25	12.00	84.0	3.27	85.38	
	D. 219/55	28.07	11.59	83.0	3.25	84.86	
	B. 54215	27.29	11.29	82.2	3.08	80.42	
	***B. 41227**	**31.23**	**9.67**	**78.9**	**3.02**	**78.85**	
	Mean :				3.83	100.00	
	Significant Difference, 20 : 1 :				.57	14.88	
	Sophia, Field 10 East "A". Reaped 12.8.59 at 14.00 months. Rainfall:—84.79 inches.						
MEANS OF 5 PLOTS:	D. 39/46	50.94	11.51	83.6	5.86	118.86	223
	C.P. 44–101	41.33	14.03	87.6	5.80	117.65	
	H. 38–2915	42.71	12.53	86.4	5.35	108.52	
	B. 46364	45.33	11.48	83.9	5.21	105.68	
	D.B. 57/55	42.95	12.01	86.0	5.16	104.67	
	D. 50/54	41.94	12.12	83.6	5.08	103.04	
	D. 53/54	46.47	10.80	83.6	5.02	101.83	
	D. 51/54	51.45	9.65	78.4	4.96	100.61	
	D. 278/55	37.79	12.94	86.2	4.89	99.19	
	B. 53218	40.56	12.00	85.7	4.89	99.19	
	***B. 41227**	**41.36**	**11.31**	**84.4**	**4.68**	**94.93**	
	D. 49/54	42.57	10.47	80.3	4.46	90.47	
	D. 246/55	43.10	9.63	79.4	4.15	84.18	
	Q. 56	30.50	11.57	84.7	3.53	71.60	
	Mean:				4.93	100.00	
	Significant Difference, 20: 1:				.71	14.40	

*** Standard Cane.**

TABLE II. (Contd.)—Results of Plant Cane Variety Trials on Demerara Frontland Clay.

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre.		Trial No.
					Tons.	% Mean.	
	Sophia, Field 13 East "B". Reaped 23.9.59 at 12.25 months. Rainfall:—76.15 inches.						
MEANS OF 5 PLOTS:	D.B. 13/54	52.68	13.44	85.6	7.08	113.10	224
	D.B. 125/54	57.06	12.39	83.5	7.07	112.94	
	D.B. 9/54	61.19	11.43	83.6	6.99	111.66	
	***B. 41227**	**55.29**	**12.17**	**84.2**	**6.73**	**107.51**	
	D. 50/54	53.83	12.14	83.5	6.53	104.31	
	D.B. 81/54	52.78	12.06	81.4	6.37	101.76	
	D.B. 68/54	46.16	13.56	85.8	6.26	100.00	
	D.B. 197/54	47.86	12.72	84.3	6.09	97.28	
	D.B. 131/54	53.28	11.34	81.5	6.04	96.49	
	D.B. 77/54	50.32	11.96	82.0	6.02	96.17	
	D.B. 7/54	54.19	10.89	79.0	5.90	94.25	
	D. 47/54	42.62	13.56	85.3	5.78	92.33	
	D.B. 80/54	43.10	12.84	86.2	5.53	88.34	
	D.B. 6/54	48.03	11.06	81.9	5.31	84.82	
	Mean:				6.26	100.00	
	Significant Difference, 20:1:				.94	15.02	
	Sophia, Field 13 East "A". Reaped 30.9.59 at 12.25 months. Rainfall:—76.08 inches.						
MEANS OF 5 PLOTS:	***B. 41227**	**54.77**	**13.08**	**86.1**	**7.16**	**116.42**	225
	D.B. 85/53	64.50	11.00	81.3	7.09	115.28	
	B. 53227	54.01	12.61	85.5	6.81	110.73	
	D.B. 255/53	49.43	13.14	87.5	6.49	105.53	
	B. 50275	55.27	11.59	84.2	6.41	104.23	
	P.R. 1000	46.85	13.17	85.5	6.17	100.33	
	B. 51116	45.84	13.45	87.6	6.16	100.16	
	H. 37–1933	49.87	12.19	84.4	6.08	98.86	
	D.B. 169/53	44.72	13.47	89.4	6.03	98.05	
	D. 53/54	55.59	10.82	79.0	6.02	97.89	
	H. 44–3098	47.53	12.60	85.6	5.99	97.40	
	D. 51/54	53.66	10.26	78.4	5.51	89.59	
	B. 5398	45.26	11.73	83.8	5.31	86.34	
	D. 49/54	50.09	9.59	76.6	4.81	78.21	
	Mean:				6.15	100.00	
	Significant Difference, 20:1:				.82	13.33	

*** Standard Cane.**

TABLE II. (Contd.)—**Results of Plant Cane Variety Trials on Demerara Frontland Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre, Tons.	Sucrose in Cane per Acre, % Mean.	Trial No.
Pln. Ogle, Field 59 0. Reaped 18.11.59 at 11.75 months. Rainfall:—64.12 inches.							
MEANS OF 5 PLOTS:	***B. 41227**	**51.12**	**13.72**	**86.5**	**7.01**	**115.49**	226
	D. 141/46	44.45	14.78	88.0	6.57	108.24	
	B. 52144	47.55	13.39	88.1	6.37	104.94	
	B. 53348	41.47	14.66	86.7	6.08	100.16	
	B. 5212	41.79	14.52	87.7	6.07	100.00	
	B. 52158	44.13	13.42	84.0	5.92	97.53	
	B. 5124	40.91	14.38	86.8	5.88	96.87	
	B. 5398	38.13	12.34	83.1	4.70	77.43	
	Mean:				6.07	100.00	
	Significant Difference, 20:1:				.72	11.86	
Pln. Farm, Field No. 30. Reaped 17.3.59 at 16.00 months. Rainfall :—84.51 inches.							
MEANS OF 5 PLOTS:	***B. 41227**	**69.68**	**14.76**	**89.6**	**10.28**	**120.80**	227
	D. 133/46	65.37	15.17	89.2	9.92	116.57	
	B. 5277	66.84	14.24	88.2	9.52	111.87	
	B. 52158	59.70	14.56	89.0	8.69	102.12	
	B. 52107	66.58	13.30	85.8	8.59	100.94	
	H. 44–3098	59.26	13.27	85.7	7.86	92.36	
	B. 52144	60.26	11.17	81.7	6.73	79.08	
	H. 39–5803	48.00	13.51	88.9	6.49	76.26	
	Mean:				8.51	100.00	
	Significant Difference, 20: 1:				.90	13.82	
Pln. L.B.I., Field C.M. 34. Reaped 8.9.59 at 13.00 months. Rainfall :—56.39 inches.							
MEANS OF 5 PLOTS:	B. 50347	47.89	11.66	84.8	5.58	111.38	228
	D. 49/46	41.92	13.18	86.6	5.52	110.18	
	D. 141/46	38.45	14.05	88.8	5.40	107.78	
	***B. 41227**	**38.66**	**12.80**	**86.1**	**4.95**	**98.80**	
	D. 50/54	38.25	12.50	85.1	4.78	95.41	
	C.P. 44–101	33.74	14.13	88.8	4.77	95.21	
	B. 53200	38.24	12.45	85.3	4.76	95.01	
	H. 38–2915	37.62	11.52	84.3	4.33	86.43	
	Mean:				5.01	100.00	
	Significant Difference, 20 : 1 :				.46	9.18	

* **Standard Cane.**

TABLE II. (Contd.)—**Results of Plant Cane Variety Trials on Demerara Frontland Clay.**

	Variety.	Cane. per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre.		Trial No.
					Tons.	% Mean.	
	Pln. Versailles, Field M.Z. 20 W.S. Reaped 23.2.59 at 14.75 months. Rainfall:—92.37 inches.						
MEANS OF 5 PLOTS:	***B. 41227**	**48.71**	**14.03**	**87.4**	**6.83**	**130.59**	229
	B. 51131	41.70	14.88	87.0	6.20	118.55	
	B. 50135	44.30	13.68	85.8	6.06	115.87	
	B. 51134	42.55	12.40	83.2	5.28	100.96	
	B. 50347	45.39	11.32	82.2	5.14	98.28	
	P.R. 1000	33.43	12.74	83.9	4.26	81.45	
	B. 51211	38.22	10.97	83.7	4.19	80.11	
	Q. 47	40.17	9.69	74.4	3.89	74.38	
	Mean:				5.23	100.00	
	Significant Difference, 20: 1:				.46	8.80	
	Results of Plant Cane Variety Trials on Berbice Frontland Clay.						
	Pln. Albion, Field R.H. 2. Reaped 23.9.59 at 13.00 months. Rainfall:—77.25 inches.						
MEANS OF 5 PLOTS:	D. 49/46	54.81	13.30	83.2	7.29	118.34	230
	B. 53227	49.68	14.46	86.1	7.18	116.56	
	B. 51116	50.55	13.78	84.1	6.97	113.15	
	B. 5213	52.17	12.51	81.7	6.53	106.01	
	***B. 41227**	**48.63**	**12.72**	**80.5**	**6.19**	**100.49**	
	B. 52158	39.58	14.12	83.7	5.59	90.75	
	B. 52316	43.17	12.69	82.3	5.48	88.96	
	H. 38–4443	36.47	11.14	78.1	4.06	65.91	
	Mean:				6.16	100.00	
	Significant Difference, 20:1:				.90	14.61	
	Pln. Blairmont, Field H.P. 12. Reaped 21.4.59 at 11.00 months. Rainfall:—46.16 inches.						
MEANS OF 5 PLOTS:	D. 141/46	43.63	13.43	89.8	5.86	111.20	231
	D. 26/52	44.45	12.75	88.7	5.67	107.59	
	C.P. 44–101	42.60	12.88	89.6	5.49	104.17	
	***B. 41227**	**44.64**	**12.07**	**87.2**	**5.39**	**102.28**	
	B. 47258	42.23	12.67	88.5	5.35	101.52	
	B. 50135	43.68	12.22	88.0	5.34	101.33	
	B. 37161	39.27	11.83	87.4	4.64	88.05	
	B. 51131	35.42	12.58	87.3	4.46	84.63	
	Mean:				5.27	100.00	
	Significant Difference, 20:1:				.41	7.78	

*** Standard Cane.**

TABLE II. (Contd.)—**Results of a Plant Cane Variety Trial on Berbice Frontland Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre. Tons.	Sucrose in Cane per Acre. % Mean.	Trial No.
Pln. Rose Hall, Field Tap. 30. Reaped 24.9.59 at 13.00 months. Rainfall:—63.11 inches.							
MEANS OF 5 PLOTS:	D. 141/46	63.89	16.10	88.9	10.29	114.59	232
	H. 38–2915	71.69	13.27	85.5	9.51	105.90	
	B. 50347	73.46	12.73	82.7	9.35	104.12	
	B. 51116	63.32	14.12	87.8	8.94	99.55	
	***B. 41227**	**67.00**	**13.24**	**84.4**	**8.87**	**98.77**	
	B. 53227	65.98	13.11	84.3	8.65	96.33	
	B. 5277	62.43	13.26	84.8	8.28	92.20	
	N.Co. 300	60.64	13.16	85.4	7.98	88.86	
	Mean:				8.98	100.00	
	Significant Difference, 20: 1:				.93	10.36	

Results of Plant Cane Variety Trials on Riverside Clay.

Pln. Ruimveldt, Field 48 South. Reaped 10.8.59 at 15.50 months. Rainfall:—47.06 inches.

MEANS OF 5 PLOTS:	***B. 41227**	**28.66**	**11.59**	**80.6**	**3.32**	**129.18**	233
	D.B. 154/55	28.18	11.62	80.0	3.28	127.63	
	D.B. 49/55	23.58	13.47	87.7	3.17	123.35	
	D.B. 5/55	23.50	12.31	80.7	2.89	112.45	
	D.B. 13/55	24.11	10.32	80.4	2.49	96.89	
	D.B. 7/55	19.08	10.25	75.1	1.96	76.26	
	D.B. 101/55	23.91	7.59	66.3	1.82	70.82	
	D.B. 1/55	19.89	8.07	67.4	1.61	62.65	
	Mean:				2.57	100.00	
	Significant Difference, 20: 1:				.38	14.79	

Pln. Wales, Field Potosi N. 2. Reaped 20.8.59 at 14.00 months. Rainfall:—82.50 inches.

MEANS OF 5 PLOTS:	B. 50347	41.66	13.47	89.5	5.61	145.34	234
	C.P. 44–101	36.91	13.22	87.7	4.88	126.42	
	D. 141/46	35.96	13.03	87.4	4.69	121.50	
	***B. 41227**	**41.69**	**10.85**	**83.1**	**4.52**	**117.10**	
	B. 50135	32.54	10.84	82.5	3.53	91.45	
	B. 53200	27.24	12.56	84.7	3.42	88.60	
	B. 46364	22.37	10.83	82.8	2.42	62.69	
	B. 53348	14.31	12.60	84.8	1.80	46.63	
	Mean:				3.86	100.00	
	Significant Difference, 20: 1:				1.13	29.27	

* **Standard Cane.**

TABLE II. (Contd.)—Results of Plant Cane Variety Trials on Pegassy Clay.

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre. Tons.	Sucrose in Cane per Acre. % Mean.	Trial No.
Pln. Diamond, Field G.G. 15 L.S. Reaped 30.9.59 at 14.50 months. Rainfall:—79.45 inches.							
MEANS OF 5 PLOTS:	D. 141/46	52.32	14.32	88.4	7.49	124.63	235
	B. 46364	51.55	13.65	88.9	7.04	117.14	
	B. 5277	46.55	14.20	88.1	6.61	109.98	
	B. 5213	51.57	12.06	85.4	6.22	103.49	
	B. 52158	47.29	12.50	83.4	5.91	98.34	
	***B. 41227**	**45.86**	**11.80**	**83.4**	**5.41**	**90.02**	
	B. 52107	37.63	13.30	85.6	5.00	83.19	
	B. 52144	37.38	11.70	81.2	4.37	72.71	
	Mean:				6.01	100.00	
	Significant Difference, 20:1:				.72	11.98	
Pln. Leonora, Field P.L. 53. Reaped 24.2.59 at 14.25 months. Rainfall:—75.17 inches.							
MEANS OF 5 PLOTS:	H. 38–2915	85.27	12.78	86.7	10.90	161.00	236
	***B. 41227**	**67.58**	**13.63**	**86.7**	**9.21**	**136.04**	
	H. 39–3633	57.30	13.45	85.5	7.71	113.88	
	H. 39–5803	49.38	14.02	88.8	6.92	102.22	
	H. 44–3098	61.52	10.78	82.0	6.62	97.78	
	Q. 57	43.23	13.50	85.2	5.82	85.97	
	Q. 50	37.79	9.30	75.8	3.51	51.85	
	H. 38–4443	43.41	7.93	69.4	3.44	50.81	
	Mean:				6.77	100.00	
	Significant Difference, 20:1:				.96	14.18	
Pln. Leonora, Field C.I. N.E. 6. Reaped 12.11.59 at 13.50 months. Rainfall:—72.80 inches.							
MEANS OF 5 PLOTS:	B. 50275	61.98	13.32	88.6	8.26	120.06	237
	***B. 41227**	**58.54**	**13.99**	**87.1**	**8.19**	**119.04**	
	B. 51116	55.96	12.99	88.1	7.27	105.67	
	B. 5277	50.33	14.09	87.4	7.09	103.05	
	B. 53200	57.26	12.08	80.7	6.92	100.58	
	B. 50135	63.04	9.83	72.5	6.20	90.12	
	B. 50347	53.40	11.38	80.2	6.08	88.37	
	B. 53218	49.39	10.19	72.4	5.03	73.11	
	Mean:				6.88	100.00	
	Significant Difference, 20:1:				.87	12.65	

*** Standard Cane.**

TABLE II. (Contd.) —**Results of Plant Cane Variety Trials on Pegassy Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre.		Trial No.
					Tons.	% Mean.	
	Pln. Non Pareil, Field 40 Strathspey. Reaped 18.8.59 at 14.75 months.						
	Rainfall:—75.42 inches.						
MEANS OF 5 PLOTS:	D. 39/46	34.23	13.36	89.1	4.57	115.70	238
	D. 26/52	31.17	14.53	91.0	4.53	114.68	
	D.B. 44/55	30.63	13.75	88.7	4.21	106.58	
	C.P. 44–101	29.10	13.67	89.6	3.98	100.76	
	D.B. 154/55	32.55	11.82	84.2	3.85	97.47	
	***B. 41227**	**32.20**	**11.88**	**85.9**	**3.83**	**96.96**	
	D.B. 13/55	30.72	11.21	86.8	3.45	87.34	
	D.B. 57/55	25.71	12.35	88.5	3.18	80.51	
	Mean:				3.95	100.00	
	Significant Difference, 20:1:				.61	15.44	

* **Standard Cane.**

C. FIRST RATOON VARIETY TRIALS.

Fifteen (15) Variety Trials were reaped as First Ratoons during 1959. The results of these trials are presented in Table III.

The classification of the First Ratoon Variety Trials according to soil type and locality is as follows:—

Soil Type and Locality.	Index Nos. of Trials.	No. of Trials.
Clays—Demerara.	198, 199, 200, 201, 202, 203, 204, 205, 206, 207.	10
Clays—Berbice.	208, 209.	2
Pegassy Clay.	210, 211, 212.	3

TABLE III.—Results of First Ratoon Variety Trials on Demerara Frontland Clay

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre, Tons.	Sucrose in Cane per Acre, % Mean.	Combined Results for 2 Crops, Plants, and 1st Ratoons. Variety.	Combined Results for 2 Crops, Plants, and 1st Ratoons. Sucrose in Cane per Acre. Tons.	Trial No.
	Sophia, Field 1 East "C". Reaped 7.4.59 at 11.75 months. Rainfall:—68.98 inches.								
MEANS OF 4 PLOTS:	B. 53200	38.22	14.06	84.8	5.37	122.60	D. 26/52	13.11	199
	B. 52389	35.49	14.95	87.7	5.31	121.23	B. 53200	12.55	
	D. 26/52	35.68	14.68	88.5	5.24	119.63	B. 52389	12.31	
	D. 18/52	34.20	14.80	86.5	5.06	115.53	B. 53218	12.16	
	***B. 41227**	**35.36**	**13.44**	**85.9**	**4.75**	**108.45**	D. 18/52	11.80	
	B. 5213	37.80	12.39	83.4	4.68	106.85	B. 53365	11.75	
	B. 53218	37.28	12.56	84.5	4.68	106.85	***B. 41227**	**11.74**	
	B. 5352	35.16	12.87	84.3	4.52	103.20	B. 5213	11.19	
	B. 53365	34.70	13.01	86.2	4.51	102.97	B. 5352	10.99	
	B. 5321	32.43	13.36	86.1	4.33	98.86	D. 16/52	10.47	
	D. 16/52	28.87	14.06	84.2	4.06	92.69	B. 53348	10.46	
	B. 53267	28.87	14.03	86.2	4.05	92.47	B. 53267	9.97	
	B. 53348	32.01	11.57	80.1	3.70	84.47	B. 5321	9.73	
	B. 53122	32.65	10.89	81.9	3.56	81.28	D. 8/52	9.19	
	B. 52371	25.13	12.56	82.5	3.16	72.15	B. 53122	9.13	
	D. 8/52	25.99	12.06	77.6	3.13	71.46	B. 52371	8.43	
	Mean:				4.38	100.00			
	Significant Difference, 20: 1:				.40	9.13			
	Sophia, Field 1 East "B". Reaped 8.4.59 at 11.75 months. Rainfall:—68.79 inches.								
MEANS OF 4 PLOTS:	***B. 41227**	**33.72**	**16.83**	**88.9**	**5.68**	**154.35**	***B. 41227**	**11.61**	200
	B. 5321	31.27	13.39	84.1	4.19	113.86	Trojan	9.76	
	Trojan	26.45	15.80	86.6	4.18	113.59	B. 51168	9.68	
	H. 39–3633	30.37	12.01	83.0	3.65	99.18	C.P. 44–101	9.52	
	B. 51168	25.17	14.31	86.5	3.60	97.83	B. 5321	9.08	
	B. 52184	22.57	12.81	80.3	2.89	78.53	H. 39–3633	8.64	
	C.P. 44–101	29.96	9.56	78.1	2.87	77.99	B. 52184	7.01	
	C.P. 34–79	25.34	9.49	70.6	2.40	65.22	C.P. 34–79	6.46	
	Mean:				3.68	100.00			
	Significant Difference, 20: 1:				1.00	27.17			

* Standard Cane.

TABLE III. (Contd.) —**Results of First Ratoon Variety Trials on Demerara Frontland Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre.		Combined results for 2 Crops, Plants and 1st Ratoons.		Trial No.
					Tons.	% Mean.	Variety.	Sucrose in Cane per Acre, Tons.	
	Sophia, Field 1 East "A". Reaped 9.4.59 at 11.75 months. Rainfall:—68.79 inches.								
MEANS OF 4 PLOTS:	D. 39/46	42.64	14.18	89.8	6.04	153.30	B. 53227	12.53	201
	***B. 41227**	**39.68**	**14.63**	**88.9**	**5.80**	**147.21**	***B. 41227**	**12.41**	
	B. 53227	37.97	15.25	90.7	5.79	146.95	D. 39/46	12.07	
	D. 18/52	36.48	13.74	88.0	5.01	127.16	D. 18/52	11.40	
	F. 36–819	28.93	13.06	83.8	3.78	95.94	B. 5037	10.24	
	B. 53348	33.87	10.47	78.1	3.54	89.85	B. 53348	9.63	
	H. 44–3098	33.99	9.86	81.3	3.35	85.03	H. 44–3098	9.48	
	B. 5037	28.08	11.73	84.1	3.29	83.50	C.P. 44–101	8.90	
	H. 39–3633	34.02	9.61	78.0	3.27	82.99	H. 39–3633	8.60	
	D. 11/52	28.28	10.40	76.2	2.94	74.62	F. 36–819	8.51	
	C.P. 44–101	30.26	9.71	80.9	2.94	74.62	D. 11/52	7.52	
	F. 31–436	22.64	6.63	57.6	1.50	38.07	F. 31–436	4.18	
	Mean:				3.94	100.00			
	Significant Difference, 20: 1:				.75	19.04			
	Sophia, Field 7 West. Reaped 16.4.59 at 12.25 months. Rainfall:—71.87 inches.								
MEANS OF 5 PLOTS:	B. 53227	43.82	16.98	92.8	7.44	127.83	***B. 41227**	**17.35**	198
	***B. 41227**	**43.69**	**16.98**	**91.5**	**7.42**	**127.49**	B. 53227	16.50	
	B. 53200	43.09	15.08	89.0	6.50	111.68	B. 53200	15.20	
	B. 53329	35.64	17.20	92.4	6.13	105.33	B. 53218	14.10	
	B. 53218	36.97	15.92	91.5	5.89	101.20	B. 53329	14.10	
	B. 53362	37.89	14.87	87.0	5.64	96.91	B. 53362	13.24	
	B. 53320	33.06	15.30	88.9	5.06	86.94	B. 53165	13.17	
	B. 53165	38.45	13.05	85.2	5.02	86.25	B. 53320	12.64	
	B. 53317	19.25	17.21	92.1	3.31	56.87	B. 53317	9.65	
	Mean:				5.82	100.00			
	Significant Difference, 20: 1:				1.10	18.90			
	Sophia, Field 12 East "B". Reaped 20.8.59 at 12.75 months Rainfall:—73.66 inches.								
MEANS OF 5 PLOTS:	B. 50267	50.80	13.47	88.4	6.84	127.37	B. 50135	15.88	202
	B. 50377	47.03	14.42	89.1	6.78	126.26	B. 50267	15.41	
	B. 50135	47.46	13.63	88.1	6.47	120.48	***B. 41227**	**14.70**	
	***B. 41227**	**45.02**	**13.30**	**87.6**	**5.99**	**111.55**	B. 51116	14.68	
	B. 51116	44.46	13.19	86.6	5.86	109.12	B. 50377	14.49	
	B. 51131	37.56	14.54	89.6	5.46	101.68	B. 51131	13.88	
	B. 5037	36.04	14.01	88.4	5.05	94.04	H. 38–2915	13.17	
	H. 39–5803	36.05	13.87	89.2	5.00	93.11	H. 39–5803	12.77	
	H. 44–3098	36.97	13.32	86.5	4.92	91.62	B. 51192	12.26	
	H. 38–2915	38.24	12.74	87.1	4.87	90.69	B. 5037	12.08	
	B. 51192	37.00	12.88	86.2	4.77	88.83	H. 44–3098	11.99	
	H. 39–3633	38.05	11.98	85.1	4.56	84.92	H. 39–7028	11.66	
	H. 39–7028	39.09	11.46	84.5	4.48	83.43	H. 39–3633	11.10	
	H. 38–4443	34.26	12.14	84.8	4.16	77.47	H. 38–4443	10.90	
	Mean:				5.37	100.00			
	Significant Difference, 20: 1:				.82	15.27			

* **Standard Cane.**

TABLE III. (Contd.)— **Results of First Ratoon Variety Trials on Demerara Frontland Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre. Tons.	Sucrose in Cane per Acre. % Mean.	Combined results for 2 Crops, Plants and 1st Ratoons. Variety.	Combined results for 2 Crops, Plants and 1st Ratoons. Sucrose in Cane per Acre, Tons.	Trial No.
	Sophia, Field 5 West "B". Reaped 11.11.59 at 11.75 months. Rainfall:—78.00 inches.								
MEANS OF 5 PLOTS:	***B. 41227**	**47.67**	**14.50**	**89.7**	**6.91**	**143.06**	***B. 41227**	**15.58**	203
	B. 34104	43.40	14.96	90.7	6.49	134.37	B. 34104	13.01	
	P.O.J. 2878	35.17	15.24	89.4	5.36	110.97	P.O.J. 2878	10.63	
	Co. 421	31.69	13.22	85.6	4.19	86.75	Co. 421	8.43	
	Diamond 10	28.26	13.78	86.7	3.89	80.54	Diamond 10	8.33	
	D. 625	18.93	11.29	79.8	2.14	44.31	D. 625	5.75	
	Mean :				4.83	100.00			
	Significant Difference, 20 : 1 :				1.33	27.54			
	Sophia, Field 5 West "C". Reaped 12.11.59 at 11.75 months. Rainfall:—78.06 inches.								
MEANS OF 5 PLOTS:	***B. 41227**	**46.33**	**14.30**	**89.2**	**6.62**	**124.20**	B. 51131	14.27	204
	B. 51131	43.12	15.19	91.3	6.55	122.89	***B. 41227**	**14.06**	
	C.P. 44–101	45.28	14.43	89.5	6.53	122.51	C.P. 44–101	13.12	
	B. 51134	49.05	12.23	84.3	6.00	112.57	B. 51134	13.05	
	P.R. 905	29.19	13.78	87.8	4.02	75.42	H. 39–5803	9.82	
	H. 39–5803	28.48	14.10	88.8	4.02	75.42	Q. 57	9.58	
	Q. 57	27.21	13.16	87.5	3.58	67.17	P.R. 905	9.12	
	Mean :				5.33	100.00			
	Significant Difference, 20 : 1 :				1.05	19.70			
	Sophia, Field 5 West "A". Reaped 14.11.59 at 11.75 months. Rainfall:—78.46 inches.								
MEANS OF 5 PLOTS:	***B. 41227**	**48.62**	**13.39**	**87.5**	**6.51**	**111.66**	***B. 41227**	**14.55**	205
	B. 53200	48.74	13.09	85.3	6.38	109.43	B. 53200	13.78	
	B. 5213	51.29	12.40	85.5	6.36	109.09	D.B. 169/53	13.43	
	D.B. 255/53	45.41	13.96	89.5	6.34	108.75	B. 5212	13.12	
	B. 52144	44.91	13.39	86.4	6.02	103.26	D.B. 255/53	13.04	
	B. 5212	43.32	13.48	86.2	5.84	100.17	B. 5213	13.01	
	D.B. 169/53	40.44	14.25	91.4	5.76	98.80	B. 52144	12.73	
	H. 39–3633	51.47	11.09	85.3	5.71	97.94	B. 53267	11.93	
	B. 53267	40.39	13.16	88.9	5.31	91.08	H. 39–3633	11.91	
	B. 53365	39.06	13.43	86.1	5.25	90.05	B. 53365	10.76	
	P.R. 1000	38.99	11.92	85.4	4.65	79.76	P.R. 1000	9.74	
	Mean :				5.83	100.00			
	Significant Difference, 20 : 1 :				.89	15.27			

***Standard Cane.**

TABLE III. (Contd.)—**Results of First Ratoon Variety Trials on Demerara Frontland Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre.		Combined results for 2 Crops, Plants and 1st Ratoons.		Trial No.
					Tons.	% Mean.	Variety.	Sucrose in Cane per Acre, Tons.	
	Pln. Lusignan, Field 39 E. Reaped 22.10.59 at 12.25 months. Rainfall :— 52.06 inches.								
MEANS OF 5 PLOTS :	D. 141/46	38.87	15.63	87.8	6.08	119.92	D. 141/46	14.87	206
	D. 49/46	45.56	13.29	82.8	6.05	119.33	D. 49/46	13.66	
	***B. 41227**	**39.95**	**14.18**	**85.4**	**5.66**	**111.64**	***B 41227**	**12.73**	
	B. 51131	34.70	15.29	85.7	5.31	104.73	B. 51131	12.34	
	D. 133/46	40.38	12.42	82.3	5.01	98.82	D. 133/46	12.23	
	B. 46364	37.15	12.59	84.0	4.68	92.31	H. 38-2915	11.65	
	H. 38-2915	37.43	11.89	82.5	4.50	88.76	B. 46364	11.22	
	H. 38-4443	26.68	12.28	82.3	3.27	64.50	H. 38-4443	9.15	
	Mean:				5.07	100.00			
	Significant Difference, 20: 1:				.61	12.03			
	Pln. Ogle, Field T.K.E. 29. Reaped 15.9.59 at 10.50 months. Rainfall:— 56.82 inches.								
MEANS OF 5 PLOTS.	***B. 41227**	**43.30**	**13.33**	**87.5**	**5.77**	**116.80**	***B. 41227**	**13.52**	207
	B. 53329	42.33	12.70	85.1	5.38	108.91	B. 53261	11.62	
	B. 53261	42.29	12.36	83.7	5.23	105.87	B. 53317	11.18	
	B. 53362	33.38	12.75	84.7	5.10	103.24	B. 53329	11.11	
	B. 53320	35.30	13.80	86.9	4.87	98.58	B. 53355	10.45	
	B. 53317	35.20	13.06	86.5	4.60	93.12	B. 53362	10.31	
	B. 53355	30.84	14.31	88.2	4.41	89.27	B. 53320	10.08	
	B. 5398	33.91	12.23	85.4	4.15	84.00	B. 5398	9.40	
	Mean :				4.94	100.00			
	Significant Oifference, 20 : 1 :				.67	13.56			
	Results of First Ratoon Variety Trials on Berbice Frontland Clay.								
	Pln. Port Mourant, Field T.L.E. 12. Reaped 12.8.59 at 11.50 months. Rainfall:—57.90 inches.								
MEANS OF 5 PLOTS :	B. 51116	41.46	14.04	85.7	5.82	180.75	B. 51116	14.11	208
	***B. 41227**	**28.61**	**14.35**	**87.0**	**4.11**	**127.64**	D. 184/46	10.64	
	B. 51131	26.30	14.42	85.3	3.79	117.70	***B. 41227**	**10.47**	
	B. 46364	26.02	13.55	84.9	3.53	109.63	B. 51131	9.57	
	D. 184/46	22.61	15.35	89.4	3.47	107.76	B. 46364	8.83	
	B. 52178	18.72	14.08	86.2	2.64	81.99	B. 52178	6.76	
	H. 44-3098	15.72	10.80	80.3	1.70	52.79	H. 44-3098	5.78	
	D. 39/46	6.36	11.04	80.3	.70	21.74	D. 39/46	5.18	
	Mean:				3.22	100.00			
	Significant Difference, 20: 1:				.58	18.01			

Standard Cane.

TABLE III. (Contd.) —**Results of First Ratoon Variety Trials on Berbice Frontland Clay.**

	Variety.	Cane per acre, Tons.	Pol. % Cane	Purity.	Sucrose in Cane per Acre. Tons.	Sucrose in Cane per Acre. % Mean.	Combined results for 2 Crops, Plants and 1st Ratoons. Variety.	Combined results for 2 Crops, Plants and 1st Ratoons. Sucrose in Cane per acre, Tons.	Trial No.
	Pln. Rose Hall, Field Smithson 10. Reaped 7.10.59 at 10.25 months. Rainfall:—58.42 inches.								
MEANS OF 5 PLOTS:	C.P. 44–101	31.82	15.97	87.9	5.08	125.12	***B. 41227**	**11.10**	209
	***B. 41227**	**31.85**	**15.05**	**85.9**	**4.79**	**117.98**	C.P. 44–101	11.00	
	B. 52178	29.37	14.70	86.4	4.32	106.40	H. 39–7028	10.35	
	B. 5178	35.84	11.94	75.9	4.28	105.42	B. 52178	9.90	
	D. 44/52	24.47	15.88	86.3	3.89	95.81	B. 5178	9.41	
	H. 39–7028	28.08	13.54	85.1	3.80	93.60	B. 50184	9.02	
	H. 44–3098	24.95	12.81	81.7	3.19	78.57	D. 44/52	8.53	
	B. 50184	24.15	13.10	83.3	3.16	77.83	H. 44–3098	8.15	
	Mean :				4.06	100.00			
	Significant Difference, 20 : 1 :				.52	12.81			
	Results of First Ratoon Variety Trials on Pegassy Clay.								
	Pln. Blairmont, Field H.P. 3 L.S. Reaped 27.10.59 at 12.25 months. Rainfall:—63.81 inches.								
MEANS OF 5 PLOTS:	D. 184/46	48.00	15.72	89.4	7.54	126.51	***B. 41227**	**14.89**	210
	***B. 41227**	**54.07**	**13.55**	**85.9**	**7.33**	**122.99**	D. 184/46	13.68	
	B. 5178	55.77	11.75	77.4	6.55	109.90	B. 5178	12.26	
	B. 52178	45.10	13.78	87.9	6.21	104.19	B. 52178	11.17	
	B. 51183	54.55	10.59	74.6	5.78	96.98	B. 51183	10.98	
	Q. 50	42.43	12.81	83.8	5.43	91.11	Q. 50	10.12	
	H. 38–4443	36.52	12.29	82.6	4.49	75.34	Q. 28	8.94	
	Q. 28	29.81	14.63	86.9	4.36	73.15	H. 38–4443	8.49	
	Mean :				5.96	100.00			
	Significant Difference, 20 : 1 :				.93	15.60			
	Pln. Diamond, Field 26 W.G.G. Reaped 19.2.59 at 10.50 months. Rainfall:—67.22 inches.								
MEANS OF 5 PLOTS:	B. 52257	32.77	14.05	87.8	4.61	119.12	B. 5277	9.83	211
	***B. 41227**	**33.61**	**13.23**	**87.4**	**4.45**	**114.99**	***B. 41227**	**9.71**	
	B. 5277	28.65	14.97	91.3	4.29	110.85	B. 49119	8.72	
	B. 49119	34.08	12.14	86.7	4.14	106.98	B. 52371	8.44	
	B. 52222	31.20	12.49	86.8	3.92	101.29	B. 52257	8.23	
	B. 52371	28.95	12.70	84.9	3.68	95.09	B. 52222	8.19	
	P.R. 1000	24.17	12.96	87.1	3.13	80.88	B. 52253	7.28	
	B. 52253	22.42	13.09	87.6	2.94	75.97	P.R. 1000	6.17	
	Mean :				3.87	100.00			
	Significant Difference, 20 : 1 :				.78	20.15			

*** Standard Cane.**

TABLE III. (Contd.)—**Results of First Ratoon Variety Trials on Pegassy Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity	Sucrose in Cane per Acre.		Combined results for 2 Crops, Plants and 1st Ratoons.		Trial No.
					Tons.	% Mean.	Variety.	Sucrose in Cane per Acre, Tons.	
	Pln. Diamond, Field 111/52. Reaped 5.11.59 at 11.50 months								
	Rainfall:—68.39 inches.								
MEANS OF 5 PLOTS:	B. 51131	48.82	15.23	90.3	7.43	110.73	B. 51131	14.21	212
	B. 50135	48.16	15.07	89.8	7.26	108.20	***B. 41227**	**13.77**	
	***B. 41227**	**50.01**	**14.27**	**87.7**	**7.14**	**106.41**	B. 50135	13.26	
	B. 50347	53.49	12.99	86.2	6.95	103.58	B. 50347	12.92	
	B. 51134	49.34	13.81	85.2	6.81	101.49	B. 51134	12.58	
	B. 5124	45.92	14.62	87.3	6.71	100.00	B. 5124	12.52	
	B. 50275	45.56	13.05	86.9	5.94	88.52	B. 50275	11.06	
	B. 51211	43.73	12.41	86.3	5.43	80.92	B. 51211	8.74	
	Mean:				6.71	100.00			
	Significant Difference, 20: 1:				.75	11.18			

D. SECOND RATOON VARIETY TRIALS.

Twenty-five (25) Variety Trials were reaped as Second Ratoons in 1959, the results of which are presented in Table IV. These varieties are classified according to soil type and locality as follows:—

Soil Type and Locality.	Index Nos. of Trials.	No. of Trials.
Clays—Demerara.	162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173. 174, 175, 176, 177.	16
Clays—Berbice.	179, 180, 183, 184, 185, 186.	6
Riverside Clays.	187, 189.	2
Pegassy Clay.	190.	1

TABLE IV.—Results of Second Ratoon Variety Trials on Demerara Frontland Clay.

	Variety.	Cane. per Acre, Tons.	Pol. % Cane	Purity.	Sucrose in Cane per Acre. Tons.	Sucrose in Cane per Acre. % Mean.	Combined results for 3 Crops, Plants, 1st and 2nd Ratoons. Variety.	Combined results for 3 Crops, Plants, 1st and 2nd Ratoons. Sucrose Cane per Acre, Tons.	Trial No.
Sophia, Field 11 West "B". Reaped 12.3.59 at 12.75 months. Rainfall:—76.23 inches.									
MEANS OF 5 PLOTS:	B. 51353	38.42	14.13	85.5	5.43	123.69	B. 49119	22.32	163
	B. 49119	36.71	14.03	86.9	5.15	117.31	B. 47419	19.99	
	B. 51131	32.31	15.87	88.1	5.13	116.86	B. 51131	19.93	
	B. 51116	31.21	15.40	87.5	4.80	109.34	B. 51353	18.95	
	B. 51183	36.27	13.04	84.3	4.73	107.74	B. 51116	18.28	
	***B. 41227**	**31.77**	**14.84**	**87.3**	**4.71**	**107.29**	***B. 41227**	**17.79**	
	B. 51211	30.12	15.21	90.7	4.58	104.33	B. 5124	17.61	
	B. 5143	32.68	13.67	85.6	4.47	101.82	B. 51211	17.32	
	B. 47419	**30.19**	14.69	86.4	4.43	100.91	B. 5121	17.18	
	B. 51355	34.02	12.57	83.2	4.28	97.49	B. 51183	17.16	
	B. 5121	33.28	12.78	84.5	4.25	96.81	B. 49311	16.54	
	B. 5124	26.56	15.69	88.8	4.17	94.99	B. 46288	15.52	
	B. 51321	26.12	15.82	86.1	4.13	94.08	Pindar	15.29	
	B. 46288	28.51	12.99	84.4	3.71	84.51	B. 51355	15.22	
	B. 49311	23.49	15.68	89.3	3.68	83.83	B. 51321	15.21	
	Pindar	26.16	13.83	86.2	3.62	82.46	B. 51105	15.04	
	B. 51105	24.09	13.87	88.2	3.34	76.08	B. 5143	14.89	
	Mean:				4.39	100.00			
	Significant Difference, 20: 1:				.88	20.05			
Sophia, Field 11 West "A". Reaped 14.3.59 at 12.75 months. Rainfall:—76.47 inches.									
MEANS OF 5 PLOTS.	B. 50347	37.48	12.98	80.7	4.87	126.17	B. 49119	18.64	162
	***B. 41227**	**33.53**	**14.51**	**85.3**	**4.86**	**125.91**	***B. 41227**	**17.36**	
	B. 49119	36.11	13.40	80.7	4.84	125.39	B. 50347	16.31	
	B. 5098	29.12	13.74	83.4	4.00	103.63	B. 47419	16.26	
	B. 47419	27.06	13.89	80.5	3.76	97.41	B. 50275	15.68	
	B. 50275	27.25	13.69	84.1	3.73	96.63	B. 49353	15.63	
	B. 49353	25.00	14.62	84.2	3.66	94.82	B. 5098	15.29	
	B. 46288	26.29	13.45	83.9	3.54	91.71	B. 46288	14.66	
	B. 50141	25.11	13.34	88.0	3.35	86.79	Pindar	14.64	
	Pindar	24.22	13.55	83.2	3.28	84.97	B. 50141	13.47	
	B. 50267	21.21	12.09	78.9	2.56	66.32	B. 50267	13.19	
	Mean:				3.86	100.00			
	Significant Difference, 20 : 1 :				.60	15.54			
Sophia, Field 9 East "A". Reaped 17.3.59 at 11.75 months. Rainfall:—72.65 inches.									
MEANS OF 5 PLOTS.	***B. 41227**	**27.50**	**17.14**	**90.5**	**4.71**	**163.54**	***B. 41227**	**17.89**	167
	B. 34104	26.21	15.18	89.9	3.98	138.19	B. 34104	16.34	
	P.O.J. 2878	19.60	15.68	89.2	3.07	106.60	P.O.J. 2878	12.90	
	Diamond 10	17.81	16.13	92.4	2.87	99.65	Diamond 10	10.79	
	Co. 421	15.20	13.51	85.0	2.05	71.18	Co. 421	9.33	
	D. 625	4.16	14.88	87.2	.62	21.53	D. 625	6.83	
	Mean :				2.88	100.00			
	Significant difference, 20 : 1 :				1.03	35.76			

***Standard Cane.**

TABLE IV. (Contd.) —**Results of Second Ratoon Variety Trials on Demerara Frontland Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre. Tons.	Sucrose in Cane per Acre. % Mean.	Combined results for 3 Crops, Plants, 1st and 2nd Ratoons. Variety.	Combined results for 3 Crops, Plants, 1st and 2nd Ratoons. Sucrose in Cane per Acre, Tons.	Trial No.
Sophia, Field 14 West "A". Reaped 24.3.59 at 12.50 months. Rainfall:—74.93 inches.									
MEANS OF 5 PLOTS:	***B. 41227**	**37.31**	**15.63**	**89.6**	**5.83**	**161.94**	***B. 41227**	**21.98**	165
	B. 34104	32.59	15.75	90.1	5.13	142.50	B. 34104	18.71	
	P.O.J. 2878	24.92	15.53	88.9	3.87	107.50	P.O.J. 2878	13.68	
	Co. 421	24.22	13.58	86.6	3.29	91.39	Co. 421	13.22	
	Diamond 10	13.13	15.72	92.8	2.06	57.22	Diamond 10	10.70	
	D. 625	10.51	13.39	86.3	1.40	38.89	D. 625	7.13	
	Mean:				3.60	100.00			
	Significant Difference, 20: 1:				1.03	28.61			
Sophia, Field 14 West "B". Reaped 24.3.59 at 12.50 months. Rainfall:—74.93 inches.									
MEANS OF 5 PLOTS:	***B. 41227**	**33.84**	**16.10**	**88.2**	**5.45**	**121.38**	***B. 41227**	**20.46**	166
	D. 142/45	32.73	16.11	89.9	5.27	117.37	B. 49198	17.94	
	B. 49198	30.12	15.39	86.5	4.64	103.34	D. 142/45	16.64	
	Pepecuca	27.59	16.10	89.1	4.44	98.88	Pepecuca	16.20	
	B. 49353	22.95	16.05	91.0	3.68	81.96	B. 49353	15.38	
	B. 50115	25.25	13.69	87.4	3.46	77.06	B. 50115	15.24	
	Mean:				4.49	100.00			
	Significant Difference, 20 : 1 :				.74	16.48			
Sophia, Field 1 West "B". Reaped 3.4.59 at 13.00 months. Rainfall:—74.28 inches.									
MEANS OF 5 PLOTS:	B. 49198	36.06	15.71	85.4	5.67	135.65	***B. 41227**	**19.23**	164
	***B. 41227**	**34.85**	**15.38**	**83.6**	**5.36**	**128.23**	B. 49198	18.51	
	N.Co. 330	30.93	14.78	86.7	4.57	109.33	B. 52178	17.34	
	B. 52178	28.46	15.46	87.9	4.41	105.50	B. 49311	15.88	
	B. 49311	26.24	15.71	88.3	4.12	98.56	N.Co. 330	15.14	
	Trojan	25.57	15.55	87.1	3.98	95.22	Co. 413	14.17	
	Co. 413	24.66	13.10	84.6	3.23	77.27	Trojan	13.53	
	B. 51190	16.90	12.62	82.9	2.13	50.96	B. 51190	11.66	
	Mean:				4.18	100.00			
	Significant Difference, 20 : 1 :				.81	19.38			

***Standard Cane.**

TABLE IV. (Contd.) —Results of Second Ratoon Variety Trials on Demerara Frontland Clay.

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre.		Combined results for 3 Crops, Plants, 1st and 2nd Ratoons.		Trial No.
					Tons.	% Mean.	Variety.	Sucrose in Cane per Acre, Tons.	
	Sophia, Field 15 East "B". Reaped 3.9.59 at 12.25 months. Rainfall:—75.99 inches.								
MEANS OF 5 PLOTS:	B. 5277	36.84	13.80	87.4	5.08	121.24	B. 5277	18.70	169
	***B. 41227**	**34.13**	**13.38**	**87.0**	**4.57**	**109.07**	***B. 41227**	**18.23**	
	B. 52158	32.15	13.33	85.4	4.29	102.39	B. 5212	18.01	
	B. 52135	29.39	14.19	90.2	4.17	99.52	B. 52222	17.15	
	B. 52222	32.39	12.55	86.3	4.07	97.14	B. 52158	16.76	
	B. 5212	30.01	13.17	87.0	3.95	94.27	B. 52135	15.27	
	B. 52306	25.45	12.72	84.5	3.22	76.85	B. 52306	15.01	
	Mean :				4.19	100.00			
	Significant Difference, 20 : 1 :				.61	14.56			
	Sophia, Field 15 East "C". Reaped 4.9.59 at 12.25 months. Rainfall:—75.99 inches.								
MEANS OF 5 PLOTS :	B. 52144	35.51	13.89	88.0	4.93	128.05	B. 52144	18.78	170
	***B. 41227**	**32.12**	**13.38**	**87.9**	**4.30**	**111.69**	***B. 41227**	**18.05**	
	B. 5235	32.81	12.98	84.5	4.26	110.64	H. 39–3633	15.94	
	H. 39–3633	31.95	13.20	86.9	4.21	109.35	B. 5235	15.65	
	B. 52214	28.82	12.00	85.0	3.46	89.87	B. 52214	15.56	
	B. 52389	27.36	11.85	83.2	3.29	85.45	B. 52389	14.59	
	B. 52256	24.32	10.18	76.4	2.47	64.16	B. 52256	11.95	
	Mean :				3.85	100.00			
	Significant Difference, 20 : 1 :				.90	23.38			
	Sophia, Field 15 East "A". Reaped 5.9.59 at 12.25 months. Rainfall:—75.99 inches.								
MEANS OF 5 PLOTS .	B. 52107	37.60	13.81	88.3	5.19	127.83	B. 52107	20.25	168
	B. 52315	35.19	13.95	85.8	4.91	120.94	B. 52315	20.15	
	B. 52257	30.68	14.27	89.1	4.38	107.88	***B. 41227**	**19.77**	
	***B. 41227**	**32.33**	**13.21**	**86.7**	**4.27**	**105.17**	B. 52257	18.42	
	B. 52253	26.93	14.54	88.2	3.92	96.55	B. 52253	15.54	
	B. 52162	28.05	11.65	84.9	3.27	80.54	B. 52162	15.23	
	B. 52184	19.82	12.55	86.4	2.49	61.33	B. 52184	11.92	
	Mean :				4.06	100.00			
	Significant Difference, 20 :1 :				.50	12.32			
	Sophia, Field 17 East. Reaped 18.9.59 at 12.00 months. Rainfall:—76.10 inches.								
MEANS OF 4 PLOTS :	Trojan	45.14	15.21	88.5	6.86	127.04	Trojan	22.18	171
	***B. 41227**	**44.37**	**13.58**	**86.4**	**6.02**	**111.48**	***B. 41227**	**21.43**	
	D. 11/52	40.69	14.18	87.8	5.77	106.85	D. 30/52	18.75	
	D. 18/52	40.47	13.65	87.1	5.52	102.22	D. 11/52	18.68	
	D. 27/52	38.88	14.08	86.5	5.47	101.30	D. 18/52	18.38	
	D. 16/52	38.17	14.16	86.6	5.40	100.00	D. 16/52	18.00	
	D. 40/52	34.49	14.24	90.2	4.91	90.93	D. 40/52	17.93	
	D. 30/52	34.01	13.96	88.7	4.75	87.96	D. 27/52	16.76	
	D. 13/52	38.89	11.96	83.4	4.65	86.11	D. 13/52	16.65	
	D. 57/52	33.71	13.71	86.4	4.62	85.56	D. 57/52	16.04	
	Mean :				5.40	100.00			
	Significant Difference, 20 : 1 :				.58	10.74			

* **Standard Cane.**

TABLE IV. (Contd.) –**Results of Second Ratoon Variety Cultivation Trials on Demerara Frontland Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre.		Combined results for 3 Crops, Plants, 1st and 2nd Ratoons.		Trial No.
					Tons.	% Mean.	Variety.	Sucrose in Cane per Acre. Tons.	
	"Standard Estate" System.								
	Sophia, Field 3 East "B". Reaped 7.10.59 at 11.75 months.								
	Rainfall:—78.34 inches.								
MEANS OF 4 PLOTS:	D. 158/41	42.95	13.25	84.6	5.69	114.49	D. 158/41	18.93	172
	D. 62/43	43.82	12.43	83.7	5.44	109.46	B. 47258	18.74	
	***B. 41227**	**40.12**	**13.23**	**86.4**	**5.30**	**106.64**	B. 4098	18.43	
	B. 47258	42.08	12.24	83.7	5.15	103.62	D. 62/43	17.89	
	B. 4098	40.30	12.79	85.3	5.15	103.62	***B. 41227**	**17.41**	
	B. 37161	37.29	11.01	83.3	4.10	82.49	B. 34104	14.87	
	B. 34104	33.30	11.96	85.7	3.98	80.08	B. 37161	13.45	
	Mean :				4.97	100.00			
	Significant Difference, 20 : 1 :				.77	15.49			
	"Cameron—Williams" System.								
	Sophia, Field 3 East "A". Reaped 11.10.59 at 11.50 months.								
	Rainfall:—78.34 inches.								
MEANS OF 4 PLOTS:	D. 158/41	49.26	12.26	84.1	6.04	111.23	B. 47258	21.78	173
	B. 47258	41.33	13.95	88.1	5.77	106.26	D. 158/41	20.57	
	D. 62/43	47.05	12.08	83.5	5.68	104.60	D. 62/43	20.54	
	***B. 41227**	**45.31**	**12.18**	**83.8**	**5.52**	**101.66**	B. 4098	19.95	
	B. 4098	44.46	12.23	84.3	5.44	100.18	***B. 41227**	**19.91**	
	B. 37161	38.97	12.27	86.5	4.78	88.03	B. 34104	18.20	
	B. 34104	36.94	12.91	87.3	4.77	87.85	B. 37161	16.32	
	Mean :				5.43	100.00			
	Significant Difference, 20 : 1 :				.86	15.84			

* **Standard Cane.**

TABLE IV. (Contd.) —**Results of Second Ratoon Variety Trials on Demerara Frontland Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity	Sucrose in Cane per Acre.		Combined results for 3 Crops, Plants 1st and 2nd Ratoons.		Trial No.
					Tons.	% Mean.	Variety.	Sucrose in Cane per Acre. Tons.	
	Pln. Farm, Field A. 19. Reaped 20.2.59 at 11.00 months. Rainfall:—73.18 inches.								
MEANS OF 5 PLOTS :	B. 47258	37.38	14.33	88.0	5.36	122.94	***B. 41227**	**15.54**	174
	***B. 41227**	**33.10**	**15.36**	**88.9**	**5.08**	**116.51**	B. 47258	15.03	
	Co. 413	34.50	13.96	89.5	4.82	110.55	Pindar	14.41	
	Pindar	30.02	15.85	92.0	4.76	109.17	B. 43413	14.25	
	B. 4214	28.14	15.47	92.8	4.35	99.77	Co. 413	12.85	
	B. 43413	30.20	14.41	86.3	4.35	99.77	B. 4214	12.37	
	N.Co. 330	26.98	15.25	91.5	4.11	94.27	Pepecuca	11.38	
	Pepecuca	24.76	15.45	90.9	3.83	87.84	N.Co. 330	10.54	
	Trojan	16.97	15.24	89.8	2.58	59.17	Trojan	8.38	
	Mean:				4.36	100.00			
	Significant Difference; 20 : 1:				.64	14.68			
	Pln. L.B.I., Field No. 55. Reaped 7.4.59 at 12.50 months. Rainfall:—58.11 inches.								
MEANS OF 5 PLOTS :	***B. 41227**	**32.27**	**16.91**	**85.2**	**5.46**	**120.00**	***B. 41227**	**19.35**	175
	B. 4214	34.24	15.78	86.5	5.40	118.68	B. 4214	16.61	
	D. 106/46	29.57	15.45	85.9	4.57	100.44	D. 106/46	15.65	
	B. 50115	31.70	13.90	83.4	4.41	96.92	B. 50115	14.77	
	N.Co. 330	28.72	15.16	85.2	4.35	95.60	N.Co. 330	14.67	
	Co. 413	31.67	13.67	83.2	4.33	95.16	Co. 413	14.22	
	D. 133/46	28.53	14.26	83.1	4.07	89.45	Pepecuca	13.76	
	Pepecuca	24.53	15.69	83.9	3.85	84.62	D. 133/46	13.36	
	Mean:				4.55	100.00			
	Significant Difference, 20 : 1 :				.41	9.01			
	Pln. Lusignan, Field G.H. 26 "B". Reaped 18.9.59 at 12.25 months. Rainfall:—60.02 inches.								
MEANS OF 5 PLOTS :	N.Co. 330	39.07	12.69	84.1	4.96	132.27	N.Co. 330	17.57	177
	***B. 41227**	**40.21**	**11.51**	**81.1**	**4.63**	**123.47**	***B. 41227**	**17.49**	
	Trojan	31.34	13.83	85.3	4.33	115.47	Trojan	16.72	
	H. 39–7028	33.92	12.04	84.3	4.09	109.07	Co. 413	16.13	
	N.Co. 300	29.26	12.73	82.7	3.72	99.20	N.Co. 300	15.83	
	Co. 413	32.88	11.21	83.5	3.69	98.40	H. 39–7028	15.42	
	Pepecuca	22.43	12.57	83.8	2.82	75.20	Pepecuca	13.55	
	Q. 28	15.48	11.35	80.4	1.76	46.93	Q. 28	11.91	
	Mean:				3.75	100.00			
	Significant Difference, 20 : 1 :				**.64**	17.07			

*** Standard Cane.**

TABLE IV. (Contd.)—**Results of Second Ratoon Variety Trials on Demerara Frontland Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre.		Combined results for 3 Crops, Plants 1st and 2nd Ratoons.		Trial No.
					Tons.	% Mean.	Variety.	Sucrose in Cane per Acre. Tons.	
	Pln. Lusignan, Field 6 M.X.E. Reaped 1.10.59 at 13.00 months. Rainfall:—54.04 inches.								
MEANS OF 5 PLOTS:	B. 50112	21.15	12.75	82.9	2.69	117.47	B. 50112	14.12	176
	B. 50135	19.29	13.30	83.6	2.57	112.23	*B. 41227	13.03	
	*B. 41227	18.89	12.28	81.3	2.32	101.31	B. 50135	13.03	
	B. 50267	17.14	13.03	84.4	2.23	97.38	B. 51134	12.02	
	B. 50210	17.77	12.28	81.1	2.18	95.20	B. 50210	11.93	
	B. 5178	20.72	10.51	77.8	2.18	95.20	B. 50267	11.70	
	B. 51134	15.65	11.97	80.2	1.87	81.66	B. 5178	11.21	
	Mean:				2.29	100.00			
	Significant Difference, 20:1:				.47	20.52			
	Results of Second Ratoon Variety Trials on Berbice Frontland Clay.								
	Pln. Albion, Field Chesney 18. Reaped 20.8.59 at 11.75 months. Rainfall:—75.87 inches.								
MEANS OF 5 PLOTS:	B. 50275	48.26	12.60	87.1	6.08	108.38	B. 50275	18.90	179
	B. 50347	46.47	12.89	86.6	6.02	107.31	D. 184/46	18.43	
	B. 50155	47.33	12.54	86.7	5.94	105.88	B. 50347	18.11	
	Pindar	40.49	14.59	88.7	5.91	105.35	B. 50155	18.11	
	*B. 41227	41.15	13.54	87.9	5.57	99.29	*B. 41227	17.76	
	B. 49119	40.00	13.77	87.4	5.51	98.22	B. 49119	17.75	
	D. 184/46	35.89	14.66	89.3	5.26	93.76	Pindar	17.68	
	B. 50210	34.47	13.27	84.0	4.58	81.64	B. 50210	16.17	
	Mean:				5.61	100.00			
	Significant Difference, 20: 1:				—	—			
	Pln. Bath, Field 22 Waterloo. Reaped 26.11.59 at 12.75 months. Rainfall:—73.39 inches.								
MEANS OF 5 PLOTS:	B. 49119	55.23	12.40	82.5	6.85	118.10	B. 49119	18.52	180
	*B. 41227	54.92	11.87	79.2	6.52	112.41	*B. 41227	17.83	
	N.Co. 330	48.84	13.01	82.7	6.35	109.48	N.Co. 330	17.35	
	Pepecuca	47.08	13.00	83.4	6.12	105.52	Co. 413	15.62	
	B. 50210	49.66	11.89	78.7	5.90	101.72	B. 5011	15.13	
	Co. 413	51.78	11.35	83.4	5.88	101.38	B. 50210	15.06	
	B. 5011	48.36	12.08	79.4	5.84	100.69	Pepecuca	14.74	
	Q. 28	21.40	13.76	83.9	2.95	50.86	Q. 28	9.90	
	Mean:				5.80	100.00			
	Significant Difference, 20: 1:				.64	11.03			

* **Standard Cane.**

TABLE IV. (Contd.)—**Results of Second Ratoon Variety Trials on Berbice Frontland Clay.**

	Variety.	Cane per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre. Tons.	Sucrose in Cane per Acre. % Mean.	Combined results for 3 Crops, Plants, 1st and 2nd Ratoons. Variety.	Combined results for 3 Crops, Plants, 1st and 2nd Ratoons. Sucrose in Cane per Acre. Tons.	Trial No.
Pln. Port Mourant, Field T.L.O.G. 24. Reaped 27.2.59 at 10.50 months. Rainfall:—45.55 inches.									
MEANS OF 4 PLOTS:	B. 45137	32.38	12.90	84.8	4.18	114.84	B. 45137	15.20	184
	B. 47225	29.42	12.96	84.9	3.81	104.67	B. 37161	14.40	
	B. 37161	28.15	12.97	84.9	3.65	100.27	B. 47258	14.35	
	B. 47258	27.68	12.69	83.0	3.51	96.43	***B. 41227**	**13.35**	
	Pindar	26.76	13.14	84.4	3.51	96.43	B. 47225	12.97	
	***B. 41227**	**27.60**	**12.62**	**83.8**	**3.48**	**95.60**	B. 4373	11.92	
	B. 4373	25.77	12.99	83.4	3.35	92.03	Pindar	11.89	
	Mean:				3.64	100.00			
	Significant Difference, 20: 1:				—	—			
Pln. Port Mourant, Field A.E.W. 2. Reaped 29.4.59 at 11.50 months. Rainfall:—51.20 inches.									
MEANS OF 4 PLOTS:	***B. 41227**	**34.80**	**11.55**	**77.4**	**4.02**	**115.85**	B. 45151	15.68	183
	B. 4373	35.55	11.24	76.4	4.00	115.27	***B. 41227**	**15.19**	
	Trojan	34.77	11.27	75.6	3.92	112.97	B. 37161	13.96	
	B. 47379	36.00	10.24	76.0	3.69	106.34	B. 4373	13.80	
	B. 45151	32.57	10.26	75.7	3.34	96.25	Trojan	13.60	
	H. 32–1063	32.10	9.91	75.4	3.18	91.64	B. 47379	13.12	
	B. 37161	32.02	9.31	74.2	2.98	85.88	Pindar	12.88	
	Pindar	33.40	7.86	77.0	2.62	75.50	H. 32–1063	11.79	
	Mean:				3.47	100.00			
	Significant Difference, 20 : 1 :				.44	12.68			
Pln. Port Mourant, Field W.O.G. 16. Reaped 11.8.59 at 11.50 months. Rainfall:—55.83 inches.									
MEANS OF 5 PLOTS:	B. 50347	42.51	11.38	83.0	4.84	117.19	D. 184/46	17.21	185
	D. 184/46	35.69	12.79	85.1	4.57	110.65	B. 50347	16.92	
	B. 50275	38.02	11.84	84.8	4.50	108.96	B. 49119	16.82	
	***B. 41227**	**35.69**	**12.14**	**84.1**	**4.33**	**104.84**	B. 50275	16.61	
	Pindar	32.86	12.38	84.4	4.06	98.30	***B. 41227**	**15.75**	
	B. 49119	30.81	12.79	83.9	3.94	95.40	Pindar	15.47	
	B. 50210	31.52	11.67	80.1	3.68	89.10	B. 50210	13.53	
	B. 50155	29.66	10.52	80.8	3.12	75.54	B. 50155	12.59	
	Mean:				4.13	100.00			
	Significant Difference, 20: 1:				.75	18.16			

* **Standard Cane.**

TABLE IV (Contd.)—Results of Second Ratoon Variety Trials on Berbice Frontland Clay.

	Variety.	Cane. per Acre, Tons.	Pol. % Cane	Purity.	Sucrose in Cane per Acre. Tons.	Sucrose in Cane per Acre. % Mean.	Combined results for 3 Crops, Plants, 1st and 2nd Ratoons. Variety.	Combined results for 3 Crops, Plants, 1st and 2nd Ratoons. Sucrose in Cane, per Acre Tons.	Trial No.
Pln. Rose Hall, Field 63 Lot 20 A. Reaped 4.3.59 at 12.25 months. Rainfall—:—80.31 inches.									
MEANS OF 5 PLOTS:	***B. 41227**	**46.23**	**14.47**	**85.8**	**6.69**	**121.20**	B. 51355	21.33	186
	B. 51355	54.18	12.03	79.7	6.52	118.12	***B. 41227**	**20.38**	
	Trojan	43.48	13.66	84.6	5.94	107.61	B. 51129	18.17	
	B. 51129	39.35	14.55	85.2	5.73	103.80	Trojan	16.84	
	B. 5121	45.21	12.52	81.6	5.66	102.54	B. 5121	16.74	
	N.Co. 330	41.41	12.75	80.1	5.28	95.65	N.Co. 330	16.72	
	B. 51156	41.14	12.33	80.4	5.07	91.85	B. 51156	15.40	
	Q. 28	26.64	12.17	78.9	3.24	58.70	Q. 28	8.47	
	Mean:				5.52	100.00			
	Significant Difference, 20: 1:				.64	11.59			
Results of Second Ratoon Variety Trials on Riverside Clay									
Pln. Farm, Field L.D. 25/27. Reaped 20.4.59 at 12.75 months. Rainfall:—62.11 inches.									
MEANS OF 5 PLOTS:	***B. 41227**	**31.00**	**16.34**	**88.8**	**5.07**	**121.58**	***B. 41227**	**16.17**	187
	B. 5121	32.48	14.13	86.8	4.59	110.07	B. 5121	14.94	
	B. 51129	28.47	15.76	89.0	4.49	107.67	B. 50115	14.35	
	B. 50115	30.58	14.53	87.7	4.44	106.47	B. 51129	14.29	
	B. 51355	30.89	13.73	84.1	4.24	101.68	B. 51355	13.96	
	B. 51190	26.36	14.14	84.9	3.73	89.45	B. 51259	12.47	
	B. 51259	23.92	14.31	87.9	3.42	82.01	B. 51190	11.97	
	N. Co. 300	23.88	14.21	86.9	3.39	81.29	N. Co. 300	10.98	
	Mean :				4.17	100.00			
	Significant Difference, 20 : 1 :				.55	13.19			
Pln. Wales, Field V. La F.A. 5 E. Reaped 29.10.59 at 11.25 months. Rainfall:—88.30 inches.									
MEANS OF 5 PLOTS:	***B. 41227**	**47.37**	**16.16**	**88.0**	**7.65**	**119.53**	***B. 41227**	**19.96**	189
	B. 51134	44.30	15.34	87.9	6.80	106.25	B. 51116	17.34	
	B. 51183	45.32	14.95	89.7	6.77	105.78	B. 51183	16.15	
	B. 51116	42.55	15.82	90.0	6.73	105.16	B. 51134	16.11	
	B. 51353	51.30	12.75	82.1	6.54	102.19	B. 51353	15.75	
	B. 5178	42.90	14.27	84.9	6.12	95.62	B. 5178	15.21	
	B. 5192	35.77	15.08	88.3	5.39	84.22	B. 5192	13.48	
	B. 51311	34.10	15.20	88.9	5.18	80.94	B. 51311	13.28	
	Mean :				6.40	100.00			
	Significant Difference, 20 : 1 :				.67	10.47			

***Standard Cane.**

TABLE IV. (Contd.)—**Results of a Second Ratoon Variety Trial on Pegassy Clay.**

	Variety.	Cane. per Acre, Tons.	Pol. % Cane.	Purity.	Sucrose in Cane per Acre.		Combined results for 3 Crops, Plants, 1st and 2nd Ratoons.		Trial No.
					Tons.	% Mean.	Variety.	Sucrose in Cane per Acre. Tons.	
	Pln. Leonora, Field Stewartville "A". Reaped 18.2.59 at 11.75 months.								
	Rainfall :—76.79 inches.								
MEANS OF 5 PLOTS :	B. 49119	51.80	15.85	89.2	8.21	140.34	B. 49119	22.25	190
	***B. 41227**	**45.90**	**15.39**	**89.2**	**7.07**	**120.85**	***B. 41227**	**21.90**	
	D. 133/46	46.12	14.27	86.6	6.58	112.48	D. 133/46	20.29	
	Pindar	40.38	15.39	90.3	6.21	106.15	Pindar	18.67	
	B. 49354	36.00	14.90	87.8	5.36	91.62	B. 49354	17.34	
	B. 5037	32.65	15.42	91.0	5.03	85.98	B. 5037	17.34	
	B. 49122	35.11	14.29	88.4	5.02	85.81	B. 49122	17.10	
	B. 49377	26.12	12.63	79.5	3.30	56.41	B. 49377	11.47	
	Mean :				5.85	100.00			
	Significant Difference, 20 : 1 :				.70	11.97			

* **Standard Cane.**

E. VARIETY PERFORMANCE SUMMARY.

Varieties under test in 1959 are discussed under the following captions :—

1. Standard Canes.
2. Barbados Seedlings produced prior to the 1948 Series.
3. Barbados Seedlings of the 1949 and 1950 Series.
4. Barbados Seedlings of the 1951, 1952, 1953 and 1954 Series.
5. Demerara Seedlings.
6. Demerara-Barbados Seedlings.
7. Varieties of Other Countries.

1. Standard Canes.

B.37161, (B.3365 x B.603).

Trial Nos.: 172, 173, 183, 184, 231.

B.41227, (B.35207 x P.O.J.2878).

These two varieties continue to give satisfactory yields on the commercial scale and in the variety trials.

In trials, B.41227 has consistently outyielded B.37161, the differences over all trials being statistically significant. While B.37161 appears to withstand dry conditions better than B.41227 this cannot be shewn to be statistically significant. However, B.37161 appears to ripen somewhat earlier than B.41227 under normal conditions of moderate to high rainfall but this difference disappears under dry conditions.

2. Barbados Seedlings produced prior to the 1948 Series.

B.45137, (B.38372 x B.34104)

Trial No. 184.

The testing of this seedling is now concluded and the results of the seventeen trials in which this variety was placed may be summarised as follows.

As plants, B.45137 has only exceeded B.41227 in yield on two occasions in neither case by significant margins. In none of the other fifteen trials on which it was beaten by the standard has the margin been significant although it has approached significance on three occasions.

In the seventeen reapings as first ratoons, B.45137 has exceeded the yield of the standard on eight occasions, five of these being by significant amounts, while in this cycle, on only one of the nine occasions on which it was beaten by the standard has the margin been significant.

In sixteen reapings as second ratoons the yield of the standard has been exceeded on seven occasions, one of these being by a significant margin. On the other nine occasions on which it was beaten by the standard in this cycle, three were by significant amounts.

B.45137 is a hardy variety when grown under heavy or moderately heavy rainfall, but its juice quality is generally poor, and tends to decrease relative to that of B.41227 still further under dry conditions.

In general, B.45137 is a strong ratooner which gives its best results relative to the standard on soils where yields are low. It is believed that this is due to its greater tolerance to loss of tilth and on the commercial scale, this variety is more likely to be worthy of trial on soils where this factor is of greater importance, e.g. on silty clays. In support of this view, it should be noted that B.45137 performs best relative to the standard on the Blairmont clays which tend to pack more rapidly and to a greater degree than do the other soil types, and performs less well relative to the standard in trials on these soils on which tilth tends to be retained. The following indices of the yields of available pol. per acre relative to those of B.41227 grouped according to the soil type clearly illustrate this.

Soil Type.	Available Pol. per Acre Index (B.41227=100).		
	Plants	1st Ratoons	2nd Ratoons
Blairmont Clays ..	97 (5)	109 (5)	102 (5)
Frontland Clays ..	88 (6)	100 (6)	96 (6)
Pegassy Clays ..	92 (6)	95 (6)	91 (5)

The figures in parentheses denote the number of trials from which the means are derived.

B.45137 is rated as tolerant to leaf scald disease, but its leaves consistently exhibit a leaf spot which has been attributed to a species of Curvalaria.

B.47258, (B.39254 x B.34104).

Trial Nos.: 172, 173, 174, 184, 231.

The testing of this variety may be regarded as completed as the two second ratoon trials remaining to be reaped in 1960 cannot affect the general picture obtained to date.

In the trials, B.47258 has given yields that in general are slightly in excess of those of the standard. (See Table VI).

In twenty-two reapings as plants, B.47258 has beaten the standard on thirteen occasions, six of these being by significant margins, and has been out-yielded nine times, three significantly.

In twenty-one reapings as first ratoons, the yield of the standard has been exceeded on sixteen occasions, two being by significant amounts, while on the five occasions on which the standard has beaten B.47258 in this cycle none has been by a significant margin.

As second ratoons, B.47258 has exceeded the yield of B.41227 on thirteen occasions, none significantly, while the standard has beaten the variety on six occasions—again none significantly.

B.47258 has performed very consistently in trials and has shewn itself to be a good ratooner and to be equally suited to clay and pegasse soils. It generally is of slightly higher available pol. content than B.41227 with a definite tendency however, for its yields and quality to fall relative to B.41227 under dry conditions.

On the commercial scale. B.47258 is generally more heavily attacked by rats than are the other commercial verieties and heavy baiting in fields planted in this variety is advocated. If, as is believed to be the case, fields in B.47258 attract rats and carry higher than average rat populations, the adoption of the practice of heavily baiting fields of B.47258 should be of considerable benefit in the control of rats on the sugar estates. It would also be preferable not to plant this variety on the periphery of the estates.

B.47258 has also been heavily attacked by aphids in some areas and this must also be considered in assessing the future commercial value of this variety.

It is believed that B.47258 will be a good factory cane as apart from its juice quality it possesses a phosphate content above average.

B.47258 is rated as tolerant to leaf scald disease.

B.47419, (P.O.J.2878 x B.34104).

Trial Nos.: 162, 163.

The testing of this variety is now completed, and the results may briefly be summarised as follows:

While yields from B.47419 are moderately satisfactory, nevertheless at all cycles the yields obtained in trials are consistently below those of B.41227. Its juice quality is also slightly below that of the standard and in addition the variety is rated as being susceptible to leaf scald disease.

3. Barbados Seedlings of the 1949 and 1950 Series.

B.49119, (B.35218 x B.4098).

Trial Nos.: 162, 163, 179, 180, 185, 190, 211.

As plants, B.49119 has given yields approximately equal to those of B.41227. In fourteen experiments the yield of the standard has been exceeded on nine occasions, twice significantly, while in the five trials in which the standard exceeded B.49119 in yield, one was by a significant margin.

As first ratoons, B.49119 beat the standard in eleven of the fourteen trials, three being by significant amounts, while on the three occasions that the

standard beat this variety, the margins were small. B.49119 is therefore definitely superior to B.41227 at this cycle.

In the thirteen trials reaped as second ratoons, B.49119 has beaten B.41227 in eight, none significantly, while in the five trials in which it was exceeded in yield by the standard the margins are again small. In this cycle also, B.49119 has definitely outyielded the standard.

From the foregoing summary it is seen that in trials, B.49119 is the equal of B.41227 as plants, but that it is somewhat better than the standard as ratoons.

B.49119 possesses well-formed stools with long stems of somewhat less than average diameter. It possesses a Pol. % Cane equal to that of the standard and but for its susceptibility to leaf scald disease this variety would undoubtedly have become a commercial cane in British Guiana.

B.49353, (B.37161 x P.O.J.2878).

Trial Nos.: 162, 166.

The testing of this variety has now been completed.

In the sorting trials, B.49353 shewed promise and while in subsequent trials as plants it has in some cases given yields approaching those of the standard, it has been very erratic. Its ratooning ability is poor as there is a progressive decrease in yields relative to those of B.41227 at each successive ratoon.

B.49353 possesses an Available Pol. % Cane somewhat above average but the variety is rated as being susceptible to leaf scald disease.

B.49354, (B.37161 x P.O.J.2878).

Trial No.: 190.

B.49354 is the same parentage as the preceding variety and is in general similar to it in behaviour and performance although possessing a higher Available Pol. % Cane and having a susceptible/tolerant rating to leaf scald disease.

B.5037, (Co.421 x B.4098).

Trial Nos.: 190, 201, 202, 221.

This variety gave moderate yields as plants under heavy rainfall but it has shewn itself to have been unsuited to the drier conditions of recent years. In addition, B.5037 possesses thin stalks and an adherent trash. It possesses a juice of average quality, with an Available Pol. % Cane Index of 101 relative to that of B.41227 as base 100.

In eight reapings as plants, B.5037 has beaten the standard on three occasions. Of the five occasions on which it has been beaten by the standard in this crop cycle, to have been by significant margins.

In seven reapings as first ratoons, the variety has only once exceeded the standard in yield, the margin in this case being small, while in the six trials in which the standard beat B.5037, three were by significant amounts.

The same pattern appears in the five second ratoon trials reaped to date, in only one of which did the variety beat the standard, while in the other four trials the margin by which it was beaten by B.41227 was relatively wide, two being by significant amounts.

Further testing of this variety is not warranted.

B.5037 is rated as being tolerant to leaf scald disease.

B.5098, (B.37161 x B.4098)

Trial No.: 162.

B.5098 gives relatively poor yields as plants but heavy yields of cane as ratoons. The Available Pol. % Cane is low however, and this variety is in consequence unable to compete against B.41227 for this reason. It is not proposed to test this variety further.

B.5098 is rated as tolerant to leaf scald disease.

B.50135, (B.38212 x B.4098)

Trial Nos.: 176, 202, 212, 221, 229, 231, 237.

B.50135 is the most promising variety of the Barbados 1950 series, giving moderately high yields as plants on clays and in the trials reaped to date yields as ratoons are in general equal to those of the standard. Its juice quality is slightly below average.

In fourteen reapings as plants, B.50135 has beaten the standard on five occasions, none significantly. Of the nine occasions on which it has been beaten by the standard, two were by significant margins.

In the nine trials reaped to date as first ratoons, the standard has been beaten in five, once significantly. On none of the four occasions on which it has been beaten by the standard in this cycle has the margin been significant.

B.50135 has been reaped as second ratoons in seven trials. In four of these it has beaten the standard and in three the standard proved the better. In none of these trials has the margin been significant.

To date therefore, B.50135 has shewn itself to be slightly below the standard as plants but its equal as ratoons. Further, it has been very consistent on clays but tends to be erratic on pegasse. Indeed, it is its performance in the trials on pegasse that has caused it to fall below the standard in the plant cane cycle.

B.50135 possesses an Available Pol. % Cane somewhat below that of B.41227, but here again its poorer quality on the pegassy soils is largely responsible for this average result.

B.50135 is rated as resistant to leaf scald disease.

It is recommended that B.50135 be given a trial on a small scale on estates.

B.50267, (B.37161 x B.4098).

Trial Nos.: 162, 176, 202.

This variety continues to give very erratic results and has not maintained the early promise shewn when tested in years of heavier rainfall than that of 1958 and 1959. In addition, its juice quality is relatively poor.

B.50267 is rated as being resistant to leaf scald disease.

B.50275, (B.37161 x B.4098).

Trial Nos.: 162, 179, 185, 212, 225, 237.

This variety is of the same parentage as B.50267. In general, B.50275 gives good yields of cane, but the juice quality is poor and in consequence the yields of Available Pol. per Acre are below those of the standard.

To date, B.50275 has been reaped on eight occasions as plants, in four of which it has exceeded the yield of the standard and in the same number been beaten by it, none of the margins being significant.

In six reapings as first ratoons, B.41227 has beaten this variety on all but one occasion, only in one case significantly however.

In the five reapings as second ratoons a similar picture is presented, B.50275 exceeding the yield of the standard twice and being beaten thrice, once significantly.

B.50275 is rated as being susceptible/tolerant to leaf scald disease.

B.50347, (B.4362 x B.4098).

Trial Nos.: 162, 179, 185, 212, 229, 232, 234, 237.

As noted in the previous Bulletin, this variety gives high yields of cane, consistently outyielding the standard in this respect, but the stalks are of a very poor quality. Nevertheless, in the trials reaped to date average yields of Available Pol. per Acre are moderately high as plants and about equal to those of the standard as ratoons. However, B.50347 has not performed well on pegasse and if the results on clays only are considered, this variety is at least equal to the standard in yield of available pol. per acre.

In twelve experiments reaped as plants, B.50347 has beaten the standard on six occasions, once significantly, while on the six occasions when it was beaten by B.41227 at this cycle, three were by significant margins, two of these being on pegassy clays.

In the seven trials reaped as first ratoons to date the variety has surpassed the standard in yield in three trials and has been beaten by it in the other four. None of the margins were significant.

In six reapings as second ratoons a similar picture to that of the first ratoons is presented, the variety outyielding the standard on three occasions and being beaten by it on the same number of times. Again, none of the margins are significant.

B.50347 should be tried on the sugar estates to a limited extent to determine its commercial possibilities. From the trials, it may be forecast that yields equal to those of the standards will be attained but Pol. % Cane values are likely to be below those of the standards.

B.50347 is rated as tolerant to leaf scald disease.

4. Barbados Seedlings of the 1951, 1952, 1953 and 1954 Series.

B.5124, (Co.421 x B.4098).

Trial Nos.: 157, 163, 212, 226.

This variety possesses juice of good quality and gave moderate yields in some trials. It is too erratic in yield however, to be worthy of further trial.

In seven trials reaped as plants, B.5124 has only exceeded the yield of the standard once, the margin being very small. On the other hand, while none of the margins were statistically significant in the other six reapings in which the variety was beaten by B.41227, they were sufficiently great to shew that B.41227 is definitely superior to this variety.

In six reapings as first ratoons, B.5124 surpassed B.41227 by small margins on two occasions, but was beaten twice by significant margins in the other four trials in which the standard proved superior.

In the five second ratoon trials reaped to date, B.5124 has only once exceeded B.41227 in yield. In the four trials in which B.41227 beat it, the margins were fairly wide although only one was statistically significant.

B.5124 is rated as being susceptible/tolerant to leaf scald disease.

B.51116, (B.4362 x B.34104).

Trial Nos.: 163, 189, 202, 208, 230, 232, 237.

This variety has performed sufficiently satisfactorily in the trials reaped to date to be regarded as having promise as a commercial cane, and moderate planting on the estates is recommended.

B.51116 has been reaped in ten trials as plants. In these, it has exceeded the yield of B.41227 in five, once significantly and has been outyielded once significantly in the other five trials in which it was beaten by the standard.

In six reapings as first ratoons, B.51116 has only once beaten the standard, the margin in this case being significant, but it was beaten by relatively small margins on the other five occasions.

In four reapings as second ratoons, the honours are equally divided, the margins in each case being small.

B.51116 possesses a juice of average quality and is rated as susceptible/tolerant to leaf scald disease.

B.51131, (B.45170 x B.41227).

Trial Nos.: 163, 202, 204, 206, 208, 212, 229, 231.

This variety is also to be regarded as having promise as a commercial cane in British Guiana, its average yield at each cycle in the trials reaped to date being about equal to those of the standard, while its quality is better than average. Accordingly, it is recommended that this variety be planted for trial on a moderate scale on the estates.

B.51131 has been reaped on eleven occasions as plants, in four of which it has exceeded B.41227 in yield, once significantly. On the seven occasions on which it was beaten by the standard, none has been by a significant margin.

In nine reapings as first ratoons, four have exceeded B.41227 in yield, once significantly, while in the five in which it has been beaten by the standard none were by significant margins.

In the four reapings as second ratoons to date, the standard has beaten the variety in three, once significantly. In the trial in which B.51131 exceeded the standard in yield the margin was not significant.

B.51131 is rated as being resistant to leaf scald disease.

B.5277, (B.37161 x B.42231).

Trial Nos.: 156, 169, 196, 211, 219, 227, 232, 235, 237.

B.5277 has been reaped on nine occasions as plants. On three of these occasions it has exceeded the yield of B.41227, once by a significant margin. On the six occasions that it was beaten by the standard in this cycle, one was significant. Although B.5277 has been beaten as plants more frequently by B.41227 than it has beaten the standard, the mean yields are close to those of the standard.

B.5277 has been reaped in four trials as second ratoons, in none of which has it exceeded the standard in yield. However, in no case was the margin significant and the mean yields were moderately high.

In two experiments reaped as second ratoons, B.5277 beat the standard in one and was itself outyielded in the other. In neither case was the margin

significant and the average yields of available pol. per acre were approximately equal.

B.5277 shews some promise but more reapings, particularly as ratoons are required before a reliable estimate of its potentialities can be made. Its yields on pegasse have tended to be erratic.

B.5277 possesses an available pol. % cane slightly above average.

B.5277 is rated as being resistant to leaf scald disease.

B.52107, (B.4145 x B.41227).

Trial Nos.: 157, 168, 196, 227, 235.

This variety shewed promise in the sorting trials and in the nurseries, but in the five trials reaped as plants to date it has not lived up to expectations, in no case attainging the yield of the standard although not being beaten by significant margins. It has however, given average and consistent yields as ratoons in the three trials reaped as first ratoons and in the two reaped as second ratoons and more reapings are required to evaluate its commercial possibilities.

B.52107 possesses an available pol. % cane slightly below average. It is rated as resistant to leaf scald disease.

B.52144, (B.37161 x B.4098)

Trial Nos.: 156, 170, 196, 205, 226, 227, 235.

B.52144 also shewed promise in the early experiments on clays, but has performed very poorly in those on pegasse. Its average juice quality is relatively poor as plants, due particularly to its poor quality on the pegassy clays, but its quality was approximately average on clays and as ratoons.

In seven reapings as plants, B.52144 has not attained the yield of B.41227 on any occasion, yields in two of these trials (both pegasse) being significantly less than those of the standard. However, the yields on the clays have been moderately satisfactory (tons available pol. per acre index of 92 in four trials), while those on pegasse have been very low (tons available pol. per acre index of 69 in three trials).

In four trials reaped as first ratoons, B.52144 gave average yields relative to the standard on the three trials on clays but was beaten by a significant margin in the single trial on pegasse reaped to date in this cycle.

In the two trials reaped as second ratoons to date the yield relative to that of B.41227 is approximately average.

B.52144 requires further testing. These trials should be confined to clay soils as it appears to be quite unsuited to pegassy clays.

On clay soils, B.52144 possesses an available pol. % cane slightly below average but its quality is very poor on pegassy soils.

B.52144 is rated as being tolerant to leaf scald disease.

B.52158, (B.37161 x B.41227).

Trial Nos. : 156, 169, 196, 226, 227, 230, 235.

This variety shewed moderate promise in the sorting trials but its performance in subsequent trials, particularly on pegasse, have been relatively poor. Further testing of this variety will be confined to clay soils.

B.52158 has been reaped on seven occasions as plants, exceeding the yield of the standard on two occasions, neither significantly, but the variety has been beaten by fairly wide margins on the other five occasions although only one proved to be statistically significant.

In the three trials reaped as first ratoons, B.52158 just exceeded the yield of B.41227 in one and was beaten significantly in one of the two trials in which the standard beat it.

In the two second ratoon reapings to date, B.52158 equalled the standard in one and was beaten by a small margin in the other.

In trials reaped to date, B.52158 possesses an Available Pol. % Cane equal to that of the standard on clays but its quality is below average on pegassy clays.

B.52158 is rated as being tolerant to leaf scald disease.

B.52315, (Co.421 x B.41227).

Trial Nos.: 157, 168, 196, 215.

This variety has been reaped on four occasions as plants, on three as first ratoons and on two as second ratoons. Its performance has been very erratic, but it has shewn up very satisfactorily on a difficult pegassy clay at Uitvlugt and further testing of this variety, particularly on pegassy clays, is desirable.

B.52315 possesses a pol. % cane below average. It is rated as being resistant to leaf scald disease.

B.53200, (Co.421 x B.41211).

Trial Nos.: 192, 197, 198, 199, 205, 228, 234, 237.

B.53200 is an attractive cane giving approximately average yields of cane per acre, but with a juice of relatively poor quality. Owing to this latter feature, this variety is unlikely to be of commercial importance in British Guiana.

B.53200 has been reaped on eight occasions as plants to date. On only one occasion has it exceeded the yield of the standard. While of the seven occasions on which it was beaten by the standard only one was by a significant margin, nevertheless, the margins were generally sufficiently wide to indicate that the variety is definitely inferior to B.41227 at this cycle age.

To date, B.53200 has been reaped on five occasions as first ratoons. Except for one experiment on a pegassy clay in which it was significantly beaten by B.41227, the average yield of the variety was approximately the same as that of the standard in the other four trials.

No second ratoons have yet been reaped.

B.53200 is rated as being tolerant to leaf scald disease.

B.53218, (B.3439 x B.45151).

Trial Nos.: 191, 197, 198, 199, 223, 237.

This variety has performed erratically to date in so far as yield is concerned. Its quality is uniformly poor and while it is one of the best of the Barbados 1953 series its potentialities as a commercial variety in British Guiana are not particularly promising owing to the two features mentioned.

B.53218 has been reaped in six trials as plants. In three of these trials it equalled or slightly exceeded B.41227 in yield. In the three trials which it was beaten by the standard, the margins were wide particularly in a trial on a pegassy clay.

In the four trials on which B.53218 was reaped as first ratoons to date, it beat the standard in one and was beaten by wide margins in two of the three trials in which it was outyielded by B.41227.

B.53218 has not yet been reaped as second ratoons.

This variety is rated as being resistant to leaf scald disease.

B.53227, (B.37161 x B.4098).

Trial Nos.: 192, 197, 198, 201, 225, 230, 232.

B.53227 is the most promising of the Barbados 1953 series. Except in the case of one trial on a pegassy clay, its performance in the plant and first ratoon trials reaped to date is consistent and equal to that of B.41227. Its vailable pol. % cane is equal to that of B.41227 as plants but somewhat better as first ratoons.

B.53227 has been reaped in seven trials as plants to date. In three of these it exceeded the standard in yield while the standard beat it by small to moderate margins in the other four trials. None of the margins was significant and in this cycle to date, B.53227 is equal to the standard.

In the four trials reaped as first ratoons B.53227 has beaten the standard in three and has been beaten once. In no instance has the margin been significant.

B.53227 is rated as being resistant to leaf scald disease.

The varieties of the Barbados 1954 series have only been reaped as plants in two or three trials to date and it is thus too early to make any worthwhile comments on them. In these trials however, the following have shewn up best: B.5490, B.54142, B.54262 and B.54277.

5. Demerara Seedlings.

D.49/46, (D.103/41 x D.200/36).

Trial Nos.: 206, 228, 230.

D.49/46 has been reaped on eighteen occasions as plants, beating the standard on seven, none significantly, and being beaten on eleven occasions, four of them being by significant amounts. D.49/46 is therefore inferior to the standard as plants. This is partly due to its poor quality in this cycle.

It is primarly as a strong ratooner that D.49/46 is of some promise, as both as first and second ratoons the standard is outyielded by this variety. While there is some improvement as ratoons in quality relative to the standard, D.49/46 is nevertheless inferior to B.41227 in this respect which considerably limits its value.

In sixteen reapings as first ratoons, this variety has outyielded B.41227 in no less than twelve, five of which were by significant margins.

In fifteen trials reaped as second ratoons, the variety has outyielded B.41227 in nine, three being by significant margins.

D.49/46 is a moderately heavy-arrowing variety and for this reason is primarily an Autumn cane. Its stalks are erect and of average diamater, but as noted above it is inferior to B.41227 in quality.

D.49/46 is particularly suited to silty clays. It is rated as being resistant to leaf scald disease.

D.141/46, (B.34104 x D.49/41).

Trial Nos.: 196, 206, 226, 228, 231, 232, 234, 235.

This variety is a heavy yielder in autumn reapings and is worthy of trial commercially. While good performances are recorded on all soil types, D.141/46 has performed particularly well on Blairmont Clays (i.e. silty clays).

In nineteen reapings as plants, D.141/46 has outyielded B.41227 in twelve, three being by significant margins. All except two of these occasions were in Autumn reapings.

In fourteen reapings as first ratoons, D.141/46 has outyielded the standard in all but two occasions, three being by significant amounts.

In the second ratoon cycle, D.141/46 has outyielded B.41227 in seven out of twelve reapings, two being by significant margins, while on the five occasions on which it was beaten by B.41227 none has been significant.

D.141/46 possesses an available pol. % cane above average. Its stalks are generally somewhat less than average diameter and it flowers moderately heavy in the Autumn. Its performance in spring and autumn reapings which are given below amply demonstrate that it is primarily an autumn cane.

D.141/46 is rated as susceptible/tolerant to leaf scald disease.

Cycle.	Available Pol. % Cane Indices		Available Pol/Acre Indices.	
	Spring.	Autumn.	Spring.	Autumn.
Plants	99 (5)	111 (14)	100 (5)	109 (14)
1 R.	107 (4)	116 (10)	101 (4)	103 (10)
2 R.	89 (2)	114 (10)	96 (2)	115 (10)

D.26/52, (B.4362 x D.20/46).

Trial Nos.: 199, 216, 231, 238.

D.26/52 has been reaped in six trials as plants performing very creditably. In all except one experiment D.26/52 has beaten the standard at this cycle while the single occasion on which it was outyielded was by a negligible amount.

In three trials as first ratoons the standard outyielded the variety in two and was beaten in one but in no case were the differences significant.

In two reapings as second ratoons D.26/52 outyielded the standard in one and was outyielded in the other, in neither case was the difference significant.

D.26/52 shews moderate promise and will be tried on a wider scale. It possesses a juice above average in quality.

D.44/52, (B.4362 x D.20/46).

Trial Nos.: 209, 216, 219.

This variety shews some promise in trials at Sophia and is being placed in experiments spread over the estates to test its possibilities more widely. Its juice is of good quality and it shews prospects of ratooning satisfactorily.

D.50/54, (Diamond 10 x D.62/43).

Trial Nos. : 194, 218, 223, 224, 228.

This variety which appears to be the most promising of the D. 1954 series has only been reaped in four trials as plants and one as first ratoons to date. In these trials, both yield and quality have been approximately the same as that of the standard and the possibilities of the variety are to be explored more widely.

Demerara 1955 Series. The sorting trials containing seedlings of this series were reaped as plants in 1959 and varieties have been selected for further testing.

6. Demerara-Barbados Seedlings.

D.B.85/53, (B.39254 x B.4744).

Trial Nos.: 158, 159, 161, 225.

This variety has given consistently heavy yields of cane of poor quality. The average tons cane per acre to date in four reapings as plants, and in three trials as first and second ratoons are, 62.08, 59.89 and 49.81 tons per acre respectively. The average available pol. % cane index relative to B.41227 is however, only 74, and in spite of its heavy tonnages of cane and vigorous growth, D.B.85/53 has no prospects of being a commercial variety.

D.B.169/53, (B.4362 x B.4098).

Trial Nos. : 159, 160, 161, 205, 219, 225.

D.B.169/53 shewed much promise as plants, with an average yield from six trials at this cycle equal to that of the standard while possessing a juice above average in quality. The yields as ratoons have, however, been disappointing with mean available pol. per acre indices relative to the standard of 84 and 81 from four and three reapings as first and second ratoons respectively. The juice quality in these cycles continues to be above average and testing of this variety will be continued.

D.B. 1954 Series. Based on the yields from the sorting trials, eleven seedlings of this series have been selected for further trial. The yields both as plants and first ratoons to date have been promising in the case of **D.B.6/54; D.B.7/54; D.B.9/54; D.B.13/54; D.B.68/54; D.B.77/54; D.B.80/54; D.B.81/54; D.B.125/54; D.B.131/54;** and **D.B.197/54.** Of these, D.B.125/54 has performed best with both yields and quality above that of the standard in two trials as plants and one as first ratoons. Further trials over a wider range of soil and weather conditions are necessary however, before the commercial possibilities of these promising varieties can be assessed sufficiently accurately for basing recommendations to estates managements.

D.B. 1955 Series. The sorting trials of this series were reaped as plants in 1959 and from these twelve varieties have been selected for further trials.

7. Varieties of Other Countries

A number of the major cane varieties of other countries have either been fully tested or are now under test. So far, none of these varieties has attained in British Guiana the yield of the major commercial canes which have been bred either locally or at the B.W.I. Central Cane Breeding Station in Barbados. Of those tested to date, the Australian variety Pindar has come nearest to being a commercial cane in British Guiana, while the yields in trials to date of H.38-2915 are moderately satisfactory.

Table V summarises the results where sufficient data have been obtained to warrant presentation. Comments have also been made on certain varieties which appear worthy of record.

TABLE V

Variety	Tons Available Pol. per Acre Index. (B.41227 = 100).			Available Pol. % Cane Index. (B.41227 = 100).
	Plants	1 R.	2 R.	
M.134/32	75 (6)	64 (6)	58 (5)	92 (17)
M.213/40	90 (7)	85 (6)	86 (6)	92 (19)
M.423/41	89 (7)	67 (6)	56 (6)	88 (19)
P.O.J.2967	62 (6)	64 (6)	52 (5)	95 (17)
P.O.J.3016	74 (10)	69 (10)	60 (9)	103 (29)
Pepecuca	72 (5)	81 (5)	77 (5)	102 (15)
Trojan	81 (9)	80 (9)	89 (8)	102 (26)
Pindar	89 (22)	90 (22)	92 (22)	101 (66)
Q.28	65 (5)	57 (5)	43 (3)	97 (13)
Co.413	82 (6)	69 (6)	71 (5)	85 (17)
C.P.44-101	100 (10)	75 (4)	—	98 (14)
F.36-819	60 (3)	53 (2)	40 (1)	86 (6)
H.37-1933	76 (6)	67 (5)	76 (4)	89 (15)
H.38-2915	104 (7)	83 (4)	106 (1)	96 (12)
H.38-4443	61 (7)	61 (5)	65 (2)	78 (14)
H.39-3633	80 (9)	72 (7)	77 (2)	85 (18)
H.39-5803	76 (7)	70 (4)	55 (2)	97 (13)
H.39-7028	89 (4)	81 (4)	90 (2)	92 (11)
H.44-3098	79 (9)	63 (5)	80 (1)	84 (15)
N.Co.300	79 (5)	69 (3)	74 (2)	97 (10)
N.Co.330	85 (7)	84 (7)	91 (7)	98 (21)
P.R.1000	68 (6)	62 (4)	78 (1)	90 (11)

Pindar.

Trial Nos.: 162, 163, 174, 179, 183, 184, 185, 190.

This variety has been tested extensively. These trials have shewn Pindar to be definitely inferior to B.41227 in yielding ability although the yields are moderately satisfactory. It improves its performance relative to B.41227 under dry conditions and it possesses a slightly higher available pol. % cane than the standard. It is a heavy arrower and therefore would be expected to perform best in Autumn crop reapings. However, unlike most heavy-arrowing varieties there is little difference in its performance in spring and autumn reapings in experiments except as second ratoons as is seen from the following:—

	Plants	1st Ratoons	2nd Ratoons
Spring	90	90	84
Autumn	89	90	96

Pindar has been reaped as plants, first and second ratoons, in twenty-two trials.

As plants, Pindar exceeded B.41227 in yield on three occasions, equalled the standard on another three and been outyielded in the other sixteen trials. On no occasion did Pindar outyield the standard by a significant margin in this, or any other cycle. As plants, it was outyielded significantly by B.41227 on eight occasions.

In the first ratoon reapings, Pindar outyielded the standard only thrice, the margins being very small, but in the other nineteen reapings at this cycle, B.41227 beat it by significant amounts on eight occasions.

As second ratoons, Pindar beat the standard on six occasions, equalling the standard once, and being outyielded in the remaining fifteen trials, on four occasions by significant amounts.

Pindar is rated as being susceptible/tolerant to leaf scald disease.

Trojan.

Trial Nos.: 164, 171, 174, 177, 183, 186, 200.

Trojan has been reaped on nine occasions as plants, in none of which has it exceeded the yield of B.41227, while it has been outyielded significantly by the standard in four of these trials.

In nine reapings as first ratoons, Trojan exceeded the yield of B.41227 in two by small margins but was beaten by large and significant amounts on six of the other seven trials.

As second ratoons, Trojan improved its yields relative to B.41227 owing to the drier conditions that obtained in the trials at this cycle as Trojan appears more adapted to these conditions than does B.41227. However, even under these conditions, Trojan only outyielded B.41227 twice, in neither case significantly, but was itself outyielded twice significantly on the six occasions on which it was beaten by B.41227.

Trojan possesses a juice of slightly above average quality. It is rated as very susceptible to leaf scald disease.

H.37—1933.

Trial Nos.: 157, 225.

This variety grows very vigorously in its early stages but this early promise is not maintained and yields and juice quality have been uniformly poor.

H.37—1933 is rated as susceptible to leaf scald.

H.38—2915

Trial Nos.: 157, 202, 206, 223, 228, 232, 236.

H.38—2915 has given the best performance of the Hawaiian varieties so far tested in British Guiana.

In four of the seven trials reaped as plants it has outyielded B.41227 while on the three occasions on which it was beaten, the margins were small.

In four trials reaped as first ratoons the yield of H.38—2915 was well below that of the standard although the differences were not statistically significant.

In the single reaping as second ratoons to date, H.38—2915 outyielded B.41227 by a small margin.

Cane quality is somewhat below average and this variety is rated as being susceptible to leaf scald disease.

H.38—4443.

Trial Nos.: 157, 158, 202, 206, 210, 230, 236.

This variety has given consistently poor quality cane and low yields as reference to Table V clearly shews. It is quite unsuited to local conditions and like the majority of the Hawaiian varieties tested to date it is susceptible to leaf scald disease.

H.39—3633.

Trial Nos.: 156, 170, 196, 200, 201, 202, 205, 219, 236.

This Hawaiian variety has been well tested and like most of the Hawaiian varieties tested so far its quality is very poor. In consequence, yields are also low.

H.39—3633 is susceptible to leaf scald disease.

H.39—5803.

Trial Nos.: 157, 158, 202, 204, 219, 227, 236.

This variety looked moderately vigorous in its early stages of growth but failed to live up to this promise.

H.39—5803 is susceptible to leaf scald disease.

H.39—7028.

Trial Nos.: 157, 177, 202, 209, 221.

H.39—7028 has occasionally given moderate yields but the general level of yield is low. Juice quality is below average.

H.44—3098.

Trial Nos.: 157, 201, 202, 208, 209, 221, 225, 227, 236.

This variety gave some promise in the sorting trials as plants while it also looked very vigorous in the early stages of its growth in the nurseries. However, quality is very poor and this is coupled with cane yields somewhat below that of the standard. In consequence, the yields are well below those of the standard. In fact, in none of the nine trials reaped as plants nor the five as first and the single second ratoon reapings has the yield of the standard been attained.

C.P.44—101.

Trial Nos.: 200, 201, 204, 209, 219, 223, 228, 231, 234, 238.

This variety is a thin upright cane which arrows heavily in the autumn.

Yields as plants, particularly in autumn reapings, have been good and average yields of available pol. per acre are equal to those of B.41227.

As first ratoons, yields in the autumn are equal to those of B.41227 but those of the spring reapings are very poor as also is juice quality in this crop season.

C.P.44—101 is purely an autumn crop cane but its field characteristics are poor and although in autumn reapings its juice quality and yield are slightly above those of the standard it does not appear to have any possibilities as a commercial variety since under the conditions in which it does well, other varieties are available with better field characteristics and with yields at least as good.

F. GENERAL SUMMARY AND RECOMMENDATIONS.

While the two major commercial varieties continue to perform satisfactorily and are difficult to surpass on their general performance, some of the newer varieties are worthy of limited trial on the commercial scale. Further, it is apparent that conclusions formed under conditions of moderate to high rainfall must often be modified when relatively dry conditions obtain. In this latter connection it may for instance be noted that B.41227 has shewn itself not to be an early ripening variety under moderate or high rainfall but the reverse holds under dry conditions. In particular, the stems of this variety tend to split in dry weather and rapid drying out and some rotting follows this circumstance.

B.4362 which yields moderately satisfactorily under conditions of heavy rainfall, has shewn itself to be a relatively good yielder under drier than average conditions, and in view of its high pol. content and suitability as a factory cane, this variety is worthy of being somewhat more widely planted than at present, especially where the factory served is hard pressed to take off the crop in the normal crop seasons.

The outstanding suitability of D.141/46, and to some degree D.37/45, as autumn canes—particularly on silty clays—suggests that these varieties should be considered to a greater degree in this context.

The following varieties should be given a trial on the commercial scale: B.50135, B.50347, B.51116 and B.51131.

On the basis of results obtained from the trials and from observations of the estates' cultivations, the following recommendations are made.

Cane Variety.	Soil Type.			
	Berbice Frontland Clay.	Demerara Frontland Clay.	Riverside Clays.	Pegassy.
B.41227	45	45	45	45
B.37161	40	40	40	40
B.47258	10	10	5	10
B.4362, D.141/46, Co. 419	5	5	10	5

TABLE VI.—**The more Outstanding Varieties Compared with B.41227**

Variety	No. of Comparisons.			Available Pol. Per Acre Index. (B.41227 = 100).			Available Pol. % Cane Index. (B.41227=100). Mean All Cycles.
	P.	1 R.	2 R.	P.	1 R.	2 R.	
D. 141/46	19	14	12	108	114	109	106
B. 49119	14	14	13	101	110	105	100
B. 47258	22	21	19	103	107	102	102
D. 49/46	18	16	15	93	106	105	95
D. 37/45	18	18	18	93	100	101	101
B. 43413	14	14	13	96	94	99	98
B. 45137	17	17	16	92	101	96	96
B. 47419	11	9	5	94	95	92	98
D. 158/41	12	12	12	98	91	94	93
B. 37161	43	42	39	91	96	92	100
B. 4362	15	15	15	93	95	91	108
B. 46378	18	18	18	94	89	95	97
B. 47225	18	18	17	95	90	86	101
D. 4/43	13	13	13	90	93	92	95
Pindar	22	22	22	89	90	92	101
B. 4098	17	17	17	96	88	83	101
B. 4995	10	10	10	92	88	87	101
D. 54/43	10	10	10	88	90	87	90
B. 46351	15	15	15	87	92	85	96
B. 4943	11	11	11	94	86	79	104
B. 4744	13	13	11	86	92	81	98
B. 47379	11	10	7	87	88	80	90
B. 4373	16	15	14	85	89	83	96
B. 43253	10	10	10	80	88	86	107
B. 34104	26	24	20	83	82	83	99

2. CULTIVATION EXPERIMENTS

BY

L. S. BIRKETT and C. CAMERON.

This experiment was designed to compare the Cameron-Williams method of cultivation with the standard estate method of hand cultivation and was reaped as second ratoons in 1959. It completes the second cycle of this experiment. The data for the second ratoon crop is presented in Table I.

TABLE I.

Cane Variety.	Standard Estate Method.			Cameron–Williams Method.		
	Tons 96° Sugar per Acre.	Juice Purity.	Tons Cane per ton 96° Sugar.	Tons 96° Sugar per Acre.	Juice Purity.	Tons Cane per ton 96° Sugar.
D. 158/41 ..	5.46	84.1	9.02	5.17	84.6	8.31
B. 47258 ..	5.35	88.1	7.73	4.65	83.7	9.04
D. 62/43 ..	5.13	83.5	9.17	4.92	83.7	8.91
B. 41227 ..	4.99	83.8	9.08	4.87	86.4	8.24
B. 4098 ..	4.92	84.3	9.03	4.70	85.3	8.58
B. 34104 ..	4.40	87.3	8.38	3.64	85.7	9.15
B. 37161 ..	4.39	86.5	8.88	3.70	83.3	10.08
Means ..	4.95	85.4	8.76	4.52	84.7	8.90

It will be seen that the yield of 96° sugar per acre is higher and the tons cane per ton 96° sugar is lower in the Cameron-Williams method of cultivation. These results duplicate those of the plant and first ratoon crops of the second cycle and demonstrate that the benefits of the deeper cultivation have been realised throughout the plant, first ratoon and second ratoon crops of the second cycle.

Summary.

The Cameron-Williams method of cultivation was developed to improve soil tilth to a depth of 24 inches (the depth of cultivation by this method) and also to allow organic matter to be incorporated with the soil to a similar depth. As incidental but important secondary effects, it was hoped to reduce the salinity of the lower layers of soil by bringing this soil to the surface where it could be better leached. Also, any improvement in tilth would be expected to improve drainage and the benefits from irrigation and also to improve cane quality. The results of the second cycle have shewn that these benefits have in fact been realised. (See Table II). It should be noted however, that the former standard estate method of hand cultivation is no longer in use and a comparison of the Cameron-Williams method against the present system of mechanical cultivation is unlikely to shew as great benefits although a comparison is desirable. This series of experiments does indicate however, that the system of deep cultivation with the bringing of subsoil to the surface for leaching is likely to considerably

improve cane yields and quality in the case of Blairmont Clays. The fact that such practise may in fact reduce yields owing to the sub-soil effect (See Sugar Bulletin, No. 24, p. 46) in the later ratoons of the first cycle of the method should be noted but is worth incurring in view of the subsequent long term benefits which should be lasting.

The possibility of carrying out the Cameron-Williams system of cultivation (or an approximation to it) by mechanical means is worth investigating.

Table II.

Plant. Cycle.	Year.	Crop Cycle.	Former Standard Estate Method.			Cameron-Williams Method.		
			Tons 96° Sugar per Acre.	Juice Purity.	Tons Cane per ton 96°. Sugar.	Tons 96° Sugar per Acre.	Juice Purity.	Tons Cane per ton 96°. Sugar.
I	1953	Plants ..	5.61	84.6	9.34	6.73	83.0	9.72
	1954	1st Ratoons ..	4.91	87.2	8.45	5.30	86.0	8.83
	1955	2nd Ratoons ..	5.29	86.3	8.69	4.88	85.6	9.02
II	1957	Plants ..	5.26	83.8	8.85	6.56	85.3	8.03
	1958	1st Ratoons ..	5.62	84.0	8.47	6.31	86.2	8.20
	1959	2nd Ratoons ..	4.52	84.7	8.90	4.95	85.4	8.76

3. LIMING EXPERIMENTS, 1959.

By L. S. BIRKETT

Two of the four continuation experiments on liming were reaped in 1959, one as plants (So. 16 W), and the other as second ratoons (So. 1 W). The yield data are given in Table I, and juice and leaf analyses in Table II.

So. 16 W — Plants. Soil Type: Blairmont Loam.

The plant cane crop reaped in 1959 was the second cycle series following the application of limestone and continued to test the long term residual effects of the original applications.

In the first cycle, as plants (1956), the highest yield was obtained at the 3 tons per acre rate of application of limestone with the yields decreasing successively at the 6 ton and 9 ton per acre rates. The yields from the limed plots were, however, above those of the controls although the differences were not statistically significant.

In the ratoons the pattern was the same except that the yields of the L_6 & L_9 plots were below those of the controls.

In the plant cane crop of the second cycle of the experiment (1959) the pattern is similar except that in all limed plots the yield is below that of the unlimed plots. In this soil type liming thus appears to have a slightly deleterious effect on yield.

So. 1 W — Second Ratoons. Soil Type: Blairmont Clay.

The second ratoon reaping in 1959 of this experiment completes the first cycle reapings. The second ratoon yields follow those of the plant and first ratoon crops in that liming has resulted in an increase in yields which follow progressively the rate of application of limestone. This is the same pattern as that of the other two experiments (So. 8 W and So. 8 E) on this soil type. The yield increases were not statistically significant however. This is contrary to what was expected when the experiments were laid down as earlier liming experiments at the Sugar Experiment Station (1931-33) gave very high and significant yield responses to limestone on this soil type. (Sugar Bulletin No. 1, pp. 64-70).

SUMMARY OF RESULTS OF 1955-59 SERIES OF LIMING TRIALS.

Five experiments covering three soil types, namely Blairmont loams, Blairmont clays and Pegassy clays were laid down in 1955, to study the long term effects of liming these soil types. Since part of the benefit derived from the application of limestone is due to its effect in making soil phosphate more available, in three of these experiments phosphate plots were included to compare the availability of soil phosphate from liming with that of applications of calcium superphosphate on the unlimed plots. The limestone was applied as a single application at the commencement of the experiments at levels 0, 3, 6 and 9 tons

per acre. Phosphate was applied to the phosphate plots at the rate of 6 cwt. of single superphosphate per acre in two series—

(i) By continued annual applications at this rate (P_6 series); and

(ii) A single application made to each plant cane crop (P_6R series) to test the residual availability of the single 6 cwt. per acre application of calcium superphosphate at planting.

All plots received nitrogen at the rate of 94 lbs. per acre to plants and 141 lbs. per acre to ratoons. Unfortunately, the experiment on the pegassy clay had to be abandoned at the end of the first cycle owing to the field having been re-ploughed and reformed and the original plot layout destroyed.

1. Yield Responses.

(a) Limestone. Yield responses to applications of limestone have been general in the case of the Blairmont and pegassy clays, the increases being progressive with rate of increase of limestone. However, except in one cycle in one of the trials these increases have not been statistically significant.

In the experiment on the Blairmont loam, however, while there has been an increase in yields from lime at the plant cane crop of the first cycle, lime caused reduced yields thereafter. The to date yields for this soil type shew a slight increase at the 3-ton per acre level of application with a tendency for higher applications of limestone to reduce yields.

(b) Phosphate. Although the phosphate levels in juice and leaf showed the soils of these experiments to have been amply supplied with phosphate, nevertheless application of phosphate gave slight increases in yield which, however, were not statistically significant. This appears to be a general effect from phosphate applications on Blairmont clays and loams. A similar effect is observed in the experiment on the pegassy clay.

The mean yield responses to date for these experiments are presented in Figure I where yields are shown as indices with the yield of the "no limestone" plots as 100.

2. Uptake of Phosphate.

In each of the three soil types of these experiments addition of lime increases the uptake of phosphate. This is shewn in both juice and leaf analyses, more particularly the former. It is believed that if juice analyses are used to calculate the lbs. P_2O_5 in juice in cane per acre, it gives a more accurate picture of phosphate uptake by the plant than either the juice or leaf analyses as such. This measure of phosphate uptake is shewn for each soil type as indices in Table III with the uptake in the "no limestone" plots as 100. From this table it is seen that on these soils there is quite a good recovery by the ratoons of phosphate applied as a single application to the plant cane crop. It should, however, be noted that less satisfactory recoveries occur on the frontland clay soils. (See Bulletin No. 25, p. 75).

TABLE III

Soil Type	Lbs. P_2O_5 in Juice per Acre (Control Plots = 100)					
	L_0	L_3	L_6	L_9	P_6	P_6R
Blairmont Loam	100.0	116.9	126.8	126.2	—	—
Blairmont Clay ..	100.0	113.8	123.8	131.4	118.0	113.7
Pegassy Clay ..	100.0	114.2	120.6	121.9	136.2	115.1

In view of the considerable increase in the availability of natural soil phosphates from liming, the relative economics of improving the phosphate status of the crop on soils poor in phosphate—

(i) by liming, and

(ii) by applications of phosphate;

are worthy of further consideration. Liming gives a long term effect and is to be advocated where there is a good reserve of soil phosphate in unavailable form, especially where other benefits arise from liming.

3. Effect of Limestone applications on the pH of the soil.

The normal pH to date of plots receiving the various limestone treatments are given in Table IV and indicate the degree to which soil acidity has been reduced by the lime applications in the experiments on the Blairmont loams and clays. Unfortunately, similar data for the experiment on the pegassy clay are not available.

TABLE IV

SOIL TYPE	Normal pH			
	Tons Limestone Applied per acre			
	0	3	6	9
Blairmont Loam	5.42	6.35	6.85	7.11
Blairmont Clay	5.46	5.84	6.13	6.33

These values taken in conjunction with the yield data presented in Figure I, indicate that lime applications to these soils should not be greater than is necessary to raise the pH to 6.0—6.3. The pH of the unlimed plots in these experiments is higher than those of the earlier experiments conducted on the Blairmont clays at the Experiment Station and this is probably the reason why these experiments have given less spectacular increases in yield from liming than the earlier experiments.

It is desirable that these experiments be continued and extended to cover other soil tpyes.

TABLE I

EXPERIMENTS ON LIMING, 1959.

Experiment.	Soil Type.	Cane Variety.	Cycle.	Tons 96° Sugar per Acre.					
				L_0.	L_3.	L_6.	L_9.	P_6.	P_6 R.
Sophia — 16 W.	Blairmont Loam.	B. 41227	P.	8.16	7.36	7.05	7.09	—	—
Sophia — 1 W.	Blairmont Clay.	B. 41227	2 R.	4.43	4.49	4.68	4.74	4.65	4.36

TABLE II

Experiment.	Phosphate (P_2O_5) % Leaf D.M.						Phosphate (P_2O_5) % Juice.					
	L_0.	L_3.	L_6.	L_9.	P_6.	P_6 R.	L_0.	L_3.	L_6.	L_9.	P_6.	P_6 R.
Sophia — 16 W.	.48	.48	.53	.52	—	—	.047	.049	.063	.055	—	—
Sophia — 1 W.	.45	.47	.49	.48	.49	.47	.047	.053	.053	.057	.056	.054

FIGURE I.

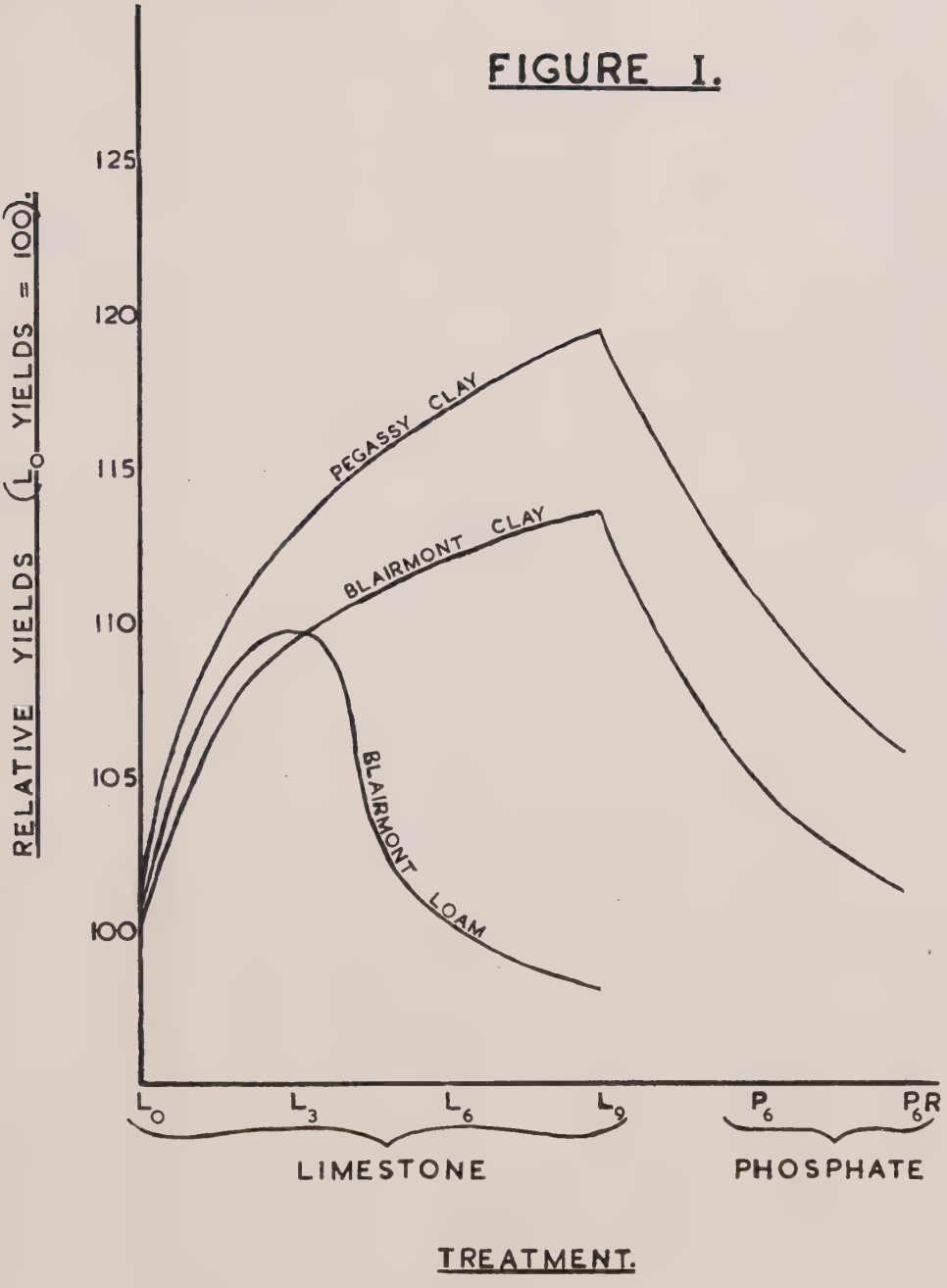

RELATIVE YIELDS (L_0 YIELDS = 100).
125
120
115
110
105
100
PEGASSY CLAY
BLAIRMONT CLAY
BLAIRMONT LOAM
L_0
L_3
L_6
L_9
P_6
P_6R
LIMESTONE
PHOSPHATE
TREATMENT.

TABLE I (A).—Weighted Mean Commercial Yields in East Demerara, 1959.

Variety.	Acres Harvested.	Tons Sugar per Acre*.	Tons Cane per ton Sugar.
Plant Canes.			
100 Acres and Over.			
B. 37161	174.1	3.92	10.63
B. 47258	273.9	3.84	9.91
B. 41227	1,654.6	3.81	10.66
B. 45137	114.4	3.34	10.70
Under 100 Acres.			
D. 141/46	16.5	4.61	10.78
B. 4362	.7	4.29	11.33
Mixed	13.3	4.20	10.00
D. 37/45	86.5	3.84	11.78
Ragnar	.3	3.33	9.46
First Ratoons.			
100 Acres and Over.			
B. 37161	249.5	3.65	11.46
B. 41227	2,074.8	3.21	11.40
B. 47258	381.5	3.12	11.38
Under 100 Acres.			
B. 49257	.2	5.00	9.00
D. 37/45	15.1	3.91	11.56
B. 47225	81.8	3.30	11.60
Mixed	23.9	3.26	12.78
H. 44–3098	10.3	2.72	10.89
B. 45137	33.5	1.85	12.63
Second Ratoons.			
100 Acres and Over.			
B. 37161	853.1	3.29	10.94
B. 47258	153.1	3.24	11.66
B. 41227	2,251.5	3.04	10.93
Under 100 Acres.			
B. 48372	17.0	3.24	10.51
N. Co. 330	10.2	3.14	10.01
B. 47225	62.5	2.97	11.58
B. 45137	4.2	2.86	12.23
B. 43253	10.0	2.40	9.34
H. 44–3098	5.8	2.07	12.43
B. 47379	20.4	1.72	10.65
Mixed	3.2	1.56	10.15
Q. 28	2.5	.80	15.64
G. 176	2.7	74	13.01
Third Ratoons.			
100 Acres and Over.			
B. 47258	112.4	3.68	11.16
B. 4373	127.4	3.51	11.01
B. 41227	1,058.8	3.15	11.19
B. 47379	181.0	2.95	12.91
Pindar	462.9	2.93	11.16
B. 37161	810.4	2.91	11.30
B. 47225	656.8	2.84	10.50
Under 100 Acres.			
D. 37/45	33.4	3.44	11.38
Eros	14.4	3.40	11.51
B. 4362	2.7	3.33	9.77
N. Co. 330	.3	3.33	13.29
H. 37–1933	3.2	2.81	13.00
B. 40102	86.0	2.80	12.69
Mixed	11.8	2.80	11.21
P.O.J. 2967	21.0	2.33	10.74
B. 46378	1.8	2.22	11.62
N. Co. 310	24.2	2.11	11.58
Trojan	1.0	2.00	10.02
B. 43253	6.5	1.85	11.67
Comus	6.5	1.54	9.60
Fourth Ratoons.			
100 Acres and Over.			
B. 37161	1,312.1	3.00	11.29
B. 4362	247.9	2.82	10.98
B. 41227	917.3	2.80	11.99
B. 47225	278.0	2.65	11.13
Under 100 Acres.			
B. 43253	.3	10.00	7.95
Co. 419	20.7	3.77	11.57
B. 46378	15.7	3.06	11.50
D. 37/45	9.3	3.01	10.45
B. 4373	4.0	3.00	12.12
B. 40105	12.7	2.99	10.77
B. 4098	15.0	2.47	13.91
Pindar	67.1	2.27	12.52

TABLE I (B.) —**Weighted Mean Commercial Yields in West Demerara, 1959.**

Variety.	Acres Harvested.	Tons Sugar per Acre*.	Tons Cane per ton Sugar.
	Plant Canes.		
	100 Acres and Over.		
B. 37161	178.3	4.56	10.36
B. 47258	138.2	4.25	10.66
B. 41227	1,670.4	4.03	11.78
	Under 100 Acres.		
D. 141/46	35.0	4.97	12.10
B. 4362	97.1	4.80	10.50
Pindar	53.2	4.55	11.50
B. 47225	4.8	3.96	9.58
B. 49119	10.0	3.60	11.67
B. 45137	26.5	3.16	10.06
Mixed	1.5	3.00	12.00
	First Ratoons.		
	100 Acres and Over.		
B. 37161	885.8	3.99	11.76
B. 47258	696.7	3.86	10.86
B. 41227	1,169.1	3.47	11.92
	Under 100 Acres.		
B. 4942	6.5	4.46	9.77
Mixed	9.5	4.28	12.38
B. 4362	50.3	3.83	10.25
Pindar	71.2	3.79	10.87
B. 47225	15.0	3.67	12.62
B. 49119	20.2	2.91	12.44
B. 45137	42.3	2.90	9.80
D. 62/43	9.7	2.36	12.35
	Second Ratoons.		
	100 Acres and Over.		
B. 37161	1,116.5	3.45	11.10
B. 41227	1,022.3	3.12	11.00
B. 4362	260.2	3.02	11.70
	Under 100 Acres.		
B. 4744	25.7	4.47	9.82
B. 47258	49.0	3.99	10.91
B. 47225	84.9	3.84	10.42
B. 4098	10.0	3.50	11.23
B. 48372	2.0	3.45	10.58
B. 50135	2.0	3.40	9.12
B. 47379	2.0	3.10	10.16
Mixed	30.2	2.83	11.64
B. 47262	1.0	2.80	10.71
B. 49119	5.0	2.58	10.55
Pindar	2.0	1.90	11.32
	Third Ratoons.		
	100 Acres and Over.		
B. 41227	621.5	3.36	11.90
B. 37161	1,366.9	3.21	11.13
B. 47258	119.8	2.75	17.44
B. 47225	565.4	2.73	12.31
	Under 100 Acres.		
B. 4744	3.4	4.12	9.52
B. 49119	2.0	4.00	13.12
D. 37/45	3.3	3.94	10.25
B. 4362	26.5	3.85	9.88
B. 4098	72.7	3.30	11.19
B. 46378	15.6	3.01	11.49
B. 47379	67.7	2.83	12.95
Mixed	20.7	2.71	12.87
B. 4373	8.0	2.23	11.52
B. 47262	9.2	1.79	15.30
	Fourth Ratoons.		
	100 Acres and Over.		
B. 4362	162.4	3.19	12.94
B. 37161	615.0	3.17	11.38
B. 47225	273.8	3.13	9.56
	Under 100 Acres.		
B. 4744	6.0	4.50	10.24
B. 46378	4.5	4.22	11.66
B. 48372	7.2	3.77	13.00
Pindar	15.5	3.41	10.79
B. 4098	46.5	3.38	11.89
Eros	5.0	3.30	13.39
B. 41227	64.5	3.29	12.15
B. 47258	24.3	5.08	11.20
Mixed	18.5	2.76	11.62
M. 112/34	6.5	1.88	17.95

TABLE I (C.)—**Weighted Mean Commercial Yields along Demerara River Banks, 1959.**

Variety.	Acres Harvested.	Tons Sugar per Acre*.	Tons Cane per ton Sugar.
Plant Canes.			
100 Acres and Over.			
Mixed	171.3	5.71	12.78
B. 41227	1,253.2	3.93	11.33
B. 47258	778.3	3.52	11.81
B. 37161	136.7	3.45	11.84
Under 100 Acres.			
B. 4942	4.5	6.44	16.24
D. 141/46	4.6	5.00	11.96
B. 45137	7.7	4.81	14.32
Pindar	5.0	4.60	10.96
B. 47225	25.0	4.32	10.85
B. 4995	1.4	4.29	10.35
Co. 419	27.5	3.97	11.02
B. 49119	60.5	3.95	11.10
B. 47419	91.5	3.81	11.23
B. 49257	2.5	3.60	10.19
First Ratoons.			
100 Acres and Over.			
B. 47225	134.0	3.68	13.22
B. 37161	745.1	3.64	10.52
B. 41227	1,122.1	3.55	11.50
Pindar	187.9	3.42	12.14
B. 47258	921.1	3.39	11.72
B. 4942	113.7	2.88	10.48
Under 100 Acres.			
B. 45137	1.0	7.00	9.43
Co. 419	79.4	3.95	11.78
B. 49119	41.0	3.34	13.57
B 49354	.3	3.33	9.20
B. 47379	20.9	3.20	13.19
Mixed	18.9	3.17	10.90
B. 47419	3.5	1.43	10.60
Second Ratoons.			
100 Acres and Over.			
Pindar	529.8	3.53	11.03
B. 47419	125.0	3.53	12.38
B. 37161	1,824.4	3.40	10.95
B. 47258	439.6	3.32	11.52
B. 41227	820.6	2.90	10.95
Under 100 Acres.			
B. 4942	5.0	5.80	10.36
Mixed	1.1	4.55	9.87
Co. 419	28.7	3.62	11.36
B. 4362	31.2	3.43	9.77
B. 47225	51.2	3.31	12.15
B. 46378	20.1	2.79	12.93
B. 46136	4.7	2.72	13.46
B. 47379	45.6	2.62	15.17
B. 43413	4.6	2.58	12.91
Third Ratoons.			
100 Acres and Over.			
B. 47225	185.9	3.38	11.29
B. 37161	2,426.3	3.36	11.42
Pindar	106.4	3.35	10.29
B. 47258	150.2	3.24	10.23
B. 41227	535.1	3.08	10.55
B. 46378	146.6	3.06	12.07
Under 100 Acres.			
B. 4373	2.0	3.35	13.00
Co. 419	26.2	3.72	11.29
B. 4362	43.0	3.63	11.07
B. 47419	75.5	3.17	12.28
N.Co. 330	.7	2.86	8.78
Mixed	13.4	2.84	10.95
Fourth Ratoons.			
100 Acres and Over.			
B. 37161	1,861.2	3.40	11.55
B. 4098	182.5	3.40	11.07
B. 47225	117.6	3.21	11.59
B. 41227	476.4	3.20	10.99
Under 100 Acres.			
B. 47147	.1	10.00	8.60
Co. 419	.5	8.00	12.35
B. 47419	1.6	5.63	10.39
B. 4373	.2	5.00	10.40
D. 37/45	40.6	4.14	11.02

TABLE I. (D)—**Weighted Mean Commercial Yields in West Demerara, 1959.**

Variety.	Acres Harvested.'	Tons Sugar per Acre*.	Tons Cane per ton Sugar.
	Plant Canes.		
	100 Acres and Over.		
B. 37161	1,141.5	4.38	11.42
B. 41227	2,117.4	4.24	11.57
B. 47258	223.7	3.76	10.55
	Under 100 Acres.		
D. 141/46	20.3	4.73	11.75
D. 158/41	23.7	4.68	11.02
B. 50135	7.8	4.62	12.77
B. 4098	4.9	4.49	10.91
D. 37/45	17.0	4.16	11.95
B. 45137	64.5	3.24	10.98
Q. 47 ..	5.4	3.15	11.46
B. 42231	3.6	3.06	10.07
Mixed	5.1	1.50	12.91
	First Ratoons.		
	100 Acres and Over.		
B. 4098	110.5	3.66	11.72
B. 47258	433.3	3.51	10.86
B. 37161	3,226.4	3.42	11.54
B. 41227	1,674.9	3.40	11.16
Pindar	115.5	3.25	9.63
	Under 100 Acres.		
B. 4362	9.8	4.58	9.82
Mixed	80.2	3.44	10.79
D. 158/41	28.7	3.34	14.75
B. 4995	5.6	3.34	10.93
B. 49301	.3	3.33	12.64
B. 49119	9.6	3.32	11.30
B. 45137	6.6	3.23	10.89
H. 44–3098	78.7	2.65	11.68
B. 47379	47.0	2.30	15.96
	Second Ratoons.		
	100 Acres and Over.		
B. 41227	2,555.2	3.41	10.79
B. 37161	3,968.5	3.30	11.44
B. 47258	892.6	3.12	11.32
Pindar	135.0	2.73	11.64
	Under 100 Acres.		
B. 4362	1.5	4.67	10.14
Mixed	46.7	3.52	10.85
B. 45137	24.0	3.33	12.09
Q. 28 ..	7.5	3.29	9.80
B. 47379	13.6	3.17	12.37
H. 44–3098	4.5	3.11	12.59
Trojan	13.6	3.01	11.24
B. 49119	9.4	2.86	10.19
B. 42231	1.3	2.38	9.74
N. Co. 330	10.1	2.17	11.79
H. 37–1933	5.1	2.16	12.16
B. 47251	15.7	2.02	11.08
B. 48372	1.0	2.00	13.35
B. 47179	2.5	1.88	10.31
	Third Ratoons.		
	100 Acres and Over.		
B. 37161	3,925.9	3.45	10.89
B. 47225	805.4	3.32	10.86
B. 41227	1,552.2	3.27	11.12
B. 47258	190.6	3.22	11.39
Pindar	378.3	2.74	11.35
	Under 100 Acres.		
N. Co. 310	1.4	3.79	10.66
B. 45137	1.2	3.67	9.55
B. 46218	4.5	3.33	10.79
Co. 419	37.6	3.19	11.36
Mixed	66.8	3.16	11.34
B. 47379 ..	13.1	3.15	10.96
Eros ..	71.8	3.13	10.93
B. 4098	75.8	3.07	11.27
D. 158/41	6.3	3.02	12.13
B. 4373	16.9	2.95	11.06
B 43253	10.1	2.83	11.40
B. 4362	16.5	2.61	10.86
H. 37–1933	20.8	2.60	11.83
B. 46378	17.0	2.48	11.35
M. 134/32	6.0	1.97	12.37
M. 112/34	4.9	1.86	14.44
P.R. 1000	2.2	1.73	11.97
	Fourth Ratoons.		
	100 Acres and Over.		

TABLE I (E).—**Weighted Mean Commercial Yields under Estate Conditions, 1959.**

Variety.	Acres Harvested.	Tons Sugar per Acre.*	Tons Cane per ton Sugar.
	Plant Canes.		
	100 Acres and Over.		
Mixed	191.2	5.47	12.63
B. 37161	1,630.6	4.27	11.24
B. 41227	6,695.6	4.03	11.37
D. 37/45	103.5	3.90	11.81
B. 47258	1,414.1	3.69	11.10
B. 45137	213.1	3.34	10.35
	Under 100 Acres.		
B. 4942	4.5	6.44	16.24
D. 141/46	76.4	4.83	11.73
B. 4362	97.8	4.80	10.51
D. 158/41	23.7	4.68	11.02
B. 50135	7.8	4.62	12.77
Pindar	58.2	4.55	11.44
B. 4098	4.9	4.49	10.91
B. 4995	1.4	4.29	10.35
B. 47225	29.8	4.26	10.66
Co. 419	27.5	3.97	11.02
B. 49119	70.5	3.90	11.17
B. 47419	91.5	3.81	11.23
B. 49257	2.5	3.60	10.19
Ragnar	.3	3.33	9.46
Q. 47	5.4	3.15	11.46
B. 42231	3.6	3.06	10.07
	First Ratoons.		
	100 Acres and Over.		
B. 4098	110.5	3.66	11.72
B. 37161	5,106.8	3.56	11.43
B. 47225	230.8	3.54	12.64
B. 47258	2,432.6	3.51	11.25
Pindar	374.6	3.44	11.14
Mixed	132.5	3.43	11.29
B. 41227	6,049.9	3.38	11.45
B. 4942	120.2	2.97	10.42
	Under 100 Acres.		
B. 49257	.2	5.00	9.00
Co. 419	79.4	3.95	11.78
B. 4362	60.1	3.95	10.17
D. 37/45	15.1	3.91	11.56
D. 158/41	28.7	3.34	14.75
B. 4995	5.6	3.34	10.93
B. 49301	.3	3.33	12.64
B. 49354	.3	3.33	9.20
B. 49119	70.8	3.21	12.96
H. 44–3098	89.0	2.66	11.68
B. 47379	67.9	2.58	11.90
B. 45137	83.4	2.56	10.72
D. 62/43	9.7	2.36	12.35
B. 47419	3.5	1.43	10.60
	Second Ratoons.		
	100 Acres and Over.		
B. 47419	125.0	3.53	12.38
B. 47225	198.6	3.43	11.17
B. 37161	7,762.5	3.35	11.22
Pindar	466.8	3.29	11.18
B. 47258	1,534.3	3.21	11.40
B. 41227	6,649.6	3.18	10.89
B. 4362	292.9	3.07	11.46
	Under 100 Acres.		
B. 4942	5.0	5.80	10.36
B. 4744	25.7	4.47	9.82
Co. 419	28.7	3.62	11.36
B. 4098	10.0	3.50	11.23
B. 50135	2.0	3.40	9.12
B. 45137	28.2	3.26	12.11
B. 48372	20.0	3.20	10.61
Mixed	81.2	3.20	11.07
Trojan	13.6	3.01	11.24
B. 47262	1.0	2.80	10.71
B. 46378	20.1	2.79	12.93
B. 49119	14.4	2.76	10.48
B. 46136	4.7	2.72	13.46
Q. 28	10.0	2.67	10.22
N. Co. 330	20.5	2.66	10.72
B. 43413	4.6	2.58	12.91
H. 44–3098	10.3	2.52	12.57
B. 47379	81.6	2.50	13.64
B. 43253	10.0	2.40	9.34
B. 42231	1.3	2.38	9.74
H. 37–1933	5.1	2.16	12.16
B. 47251	15.7	2.02	11.08
B. 47179	2.5	1.88	10.31
G. 176	2.7	.74	13.01
	Third Ratoons.		
	100 Acres and Over.		
B. 4373	154.3	3.39	11.22
B. 37161	8,529.5	3.33	11.10

THE VARIETY AND FERTILIZER POSITION OF THE SUGAR INDUSTRY. XXV.

BY

L. S. BIRKETT, Sugar Agronomist.

1. **Commercial Yields, 1959.** The data obtained from returns submitted by the sugar estates are presented on a regional basis in Table I. From these returns, the average yield in 1959 of tons commercial sugar per acre from all varieties on the sugar estates in British Guiana was 3.37 tons as compared with 3.73 tons per acre in 1958 and 3.62 tons per acre in 1957.

TABLE II.—Weighted Average Yields for Major Cane Varieties, 1959.

Cane Variety.	Average Yield, Tons Sugar per Acre, 1959.						Average Tons Cane per ton Sugar.
	Plants.	1 R.	2 R.	3 R.	4 R.	Old R.	
B. 4362 ..	4.80*	3.95*	3.07	3.50*	2.89	3.27	11.36
B. 4098 ..	4.49*	3.66*	3.50	3.18	3.18	2.84	11.60
B. 37161 ..	4.27	3.56	3.35	3.33	3.22	3.17	11.28
B. 47225 ..	4.26*	3.54	3.43	3.03	2.94	3.25*	11.27
B. 41227 ..	4.03	3.38	3.18	3.23	3.09	3.04	11.29
B. 47258 ..	3.69	3.51	3.21	3.22	2.99*	—	11.32
Pindar ..	4.55*	3.44	3.29	2.90	2.79	2.50	11.30
Colony Averages. (All Varieties).	4.05	3.45	3.26	3.22	3.14	3.20	11.31

* **The Acreages reaped in 1959 in these crop cycles are relatively small and probably not representative.**

In Table II are summarised the average yields and tons cane required to produce a ton of sugar of those varieties which occupy a total acreage (all cycles) in excess of 1,000 acres, in 1959. Except in the case of B.37161, B.41227 and B.47258, the acreages shewn for some of the cycles are small and hence undue importance should not be attached to the yields in such cases which are given for general information. A better picture is given by the average commercial yields of the varieties to date. These are given in Table III.

However, since the yield of the older ratoons is largely dependent on the degree of selection of fields to be retained in cultivation, attention must also be given to the percentage of the plant cane acreage retained in cultivation in assessing the value of a variety on the commercial scale (See Table IX for 1959 data).

TABLE III. —Average Yields Sugar per Acre on Commercial Scale to date.

Variety.	Period.	Plants.	1 R.	2 R.	3 R.
B. 41227	1950/1959	4.07	3.70	3.57	3.47
B. 47258	1954/1959	4.14	3.86	3.64	3.24
B. 37161	1948/1959	4.06	3.78	3.51	3.43
B. 4098	1950/1959	4.05	3.69	3.43	3.20
B. 4362	1951/1959	4.02	3.71	3.36	3.11
Pindar	1955/1959	3.99	3.61	3.47	2.96
B. 47225	1953/1959	3.88	3.43	3.28	3.15

2. **Varietal Composition of the 1959 Harvest.** The acreage and regional distribution of the varieties reaped in 1959 are shown in Table IV. The acreage occupied by the various varieties which constitute the "other canes" category is given in Table V.

TABLE IV.—Acreage and Percentage Distribution of the Varieties Reaped in 1959.

Variety.	English Acres.	Percentage Distribution. In West Demerara.	Along Demerara River Banks.	In East Demerara.	Berbice.	Colony.
B. 37161 ..	33,823.1	13.6	25.3	11.6	49.5	38.9
B. 41227 ..	32,643.4	16.6	18.0	27.4	38.0	37.6
B. 47258 ..	6,347.6	17.0	38.4	15.4	29.2	7.3
B. 47225 ..	3,742.4	27.7	14.4	30.3	27.6	4.3
Pindar ..	2,109.1	7.1	31.4	26.4	35.1	2.4
B. 4362 ..	1,924.7	44.3	14.5	25.6	15.6	2.2
B. 4098 ..	1,866.4	7.6	20.5	4.5	67.4	2.2
Co. 419 ..	634.2	—	84.6	9.2	6.2	.7
B. 47379 ..	464.6	16.0	15.0	52.3	16.7	.5
B. 45137 ..	343.6	21.0	2.7	46.5	29.8	.4
B. 47419 ..	312.6	—	100.0	—	—	.4
B. 46378 ..	290.1	7.3	66.7	10.1	15.9	.3
D. 37/45 ..	226.3	1.5	19.1	67.0	12.4	.3
B. 4373 ..	178.5	4.7	1.5	77.4	16.4	.2
B. 49119 ..	165.7	23.6	64.3	—	12.1	.2
Other Canes ..	1,855.6	14.9	23.3	19.9	41.9	2.1
Totals	86,927.9	15.8	23.5	19.9	40.8	100.0

TABLE V —Acreages of the Varieties Constituting the "Other Canes" Category, 1959.

Variety.	English Acres.	Variety.	English Acres	Variety.	English Acres
B. 34104 ..	35	B. 4942	136	H. 37–1933	31
B. 40102 ..	90	B. 4995	7	H. 44–3098	104
B. 40105 ..	35	B. 49257	3	M. 134/32	6
B. 42231 ..	5	B. 49353	1	M. 112/34	12
B. 43253 ..	28	B. 50135	10	M. 423/41	1
B. 43413 ..	7	Comus	7	N. Co. 310	27
B. 46136 ..	5	D. 14/34	11	N. Co. 330	22
B. 46218 ..	5	D. 142/41	38	P.O.J. 2967	22
B. 4733 ..	1	D. 158/41	112	P.R. 1000	2
B. 4744 ..	37	D. 62/43	44	Q. 28	11
B. 47179 ..	3	D. 141/46	80	Q. 47	6
B. 47251 ..	16	Eros	112	Trojan	15
B. 47262 ..	1	G. 176	3	Mixed Varieties	726
B. 48372 ..	38				

B.37161 and B.41227 continue to be the major commercial varieties accounting between them for 76.5 percent of the acreage reaped in 1959. B. 47258 has also performed satisfactorily although the average yields of this variety on the commercial scale has been lower in 1959 than in the three previous years.

3. **Acreages in the Various Varieties Scheduled for Reaping in 1960.** The acreages in the various varieties which are scheduled for reaping in 1960 are given in Table VI.

TABLE VI.—**Percentage Distribution of the Varieties to be reaped in 1960.**

Varieties.	Total English Acres in the Respective Cane Varieties.	Percentage Distribution.				
		In West Demerara	Along Demerara River Banks.	In East Demerara	In Berbice.	Colony.
B. 41227	37,722.77	16.1	20.2	26.0	37.7	41.9
B. 37161	32,672.70	13.5	25.3	11.0	50.2	36.3
B. 47258	6,813.37	19.0	38.2	18.3	24.5	7.6
B. 47225	3,553.55	28.8	16.8	28.7	25.7	3.9
Pindar	1,833.52	9.9	34.8	25.6	29.7	2.0
B. 4362	1,810.98	55.0	12.3	21.6	11.1	2.0
B. 4098	1,161.86	6.3	19.6	7.2	66.9	1.3
Co. 419	633.39	1.7	82.9	9.2	6.2	.7
B. 45137	498.75	15.7	1.8	34.0	48.5	.6
B. 47379	419.72..	18.2	16.7	50.1	15.0	.5
D. 37/45	399.17	.9	10.4	83.3	5.4	.4
D. 141/46	352.82	62.4	17.6	5.2	14.8	.4
B. 46378	252.29	4.5	75.9	6.1	13.5	.3
B. 47419	180.25	—	100.0	—	—	.2
B. 49119	176.94	27.4	59.7	1.2	11.7	.2
B. 4373	172.05	4.9	1.2	78.4	15.5	.2
B. 4942	152.29	8.8	91.2	—	—	.2
D. 158/41	111.72	+	—	—	100.0	.1
Other Canes ..	1,146.40	16.1	11.7	15.6	56.6	1.2
Totals ..	90,064.54	16.4	24.0	19.7	39.9	100.0

It will be noted that B.41227 occupies the highest percentage of the acreage scheduled for reaping in 1960, with B.37161 not far behind. These two varieties account for 78% of the acreage. B.47258 which occupies 7.6% of the acreage is a poor third at the same percentage of the reaping acreage as in 1959. The remaining 14% of the acreage is taken up by small acreages under a number of varieties formerly more extensively planted e.g. B.4098 and B.4362, and by others that are suited to certain special conditions, e.g. Co.419, B.45137 and D.37/45.

4. **The Changing Variety Pattern.** There has not been any marked change in the variety pattern since 1955. B.41227 and B.37161 remain the major cane varieties over this period with small percentages of other varieties planted but none since that date has exceeded 10% of the acreage for reaping and of varieties at present in cultivation, only B.47258 appears to have any likelihood of doing so.

The percentage of the acreage under the various cane varieties in the Colony over the period 1948—1959 is presented in Table VII.

5. **Cycle Age of the Crops.** The distribution of the acreage under cane in plants and the various categories of ratoons for the period 1951—1960 is given in Table VIII.

TABLE VII.— —Summary of the Percentage of the Acreage under the Major Cane Varieties, 1948—1959.

Variety.	Per cent. of Total Areas in the Colony.											
	1948.	1949.	1950.	1951.	1952.	1953.	1954.	1955.	1956.	1957.	1958.	1959.
P.O.J. 2878	13.6	6.9	1.6	0.4	—	—	—	—	—	—	—	—
Diamond 10	14.4	8.4	3.1	0.9	0.4	—	—	—	—	—	—	—
D. 166/34	0.5	—	—	—	—	—	—	—	—	—	—	—
Co. 419	8.2	6.8	4.5	2.7	1.7	1.4	1.5	1.4	1.4	0.9	0.7	0.7
Co. 421	19.3	14.2	8.5	3.5	2.1	0.8	—	—	—	—	—	—
D. 14/34	17.4	20.6	20.2	15.0	8.6	4.9	2.7	0.9	—	—	—	—
B. 34104	22.6	39.8	58.4	67.4	60.2	47.7	31.1	13.3	2.6	—	—	—
D. 200/36	1.9	1.7	0.7	—	—	—	—	—	—	—	—	—
B. 4098	—	—	—	—	1.3	4.6	8.7	10.3	8.1	5.4	3.4	2.2
B. 37161	—	—	1.4	3.6	9.4	14.4	19.1	29.6	39.5	43.1	42.8	38.9
B. 40105	—	—	—	—	0.5	0.7	1.8	1.5	0.8	—	—	—
B. 41227	—	—	0.3	3.8	12.7	21.7	29.1	34.3	31.0	32.0	33.6	37.6
D. 142/41	—	—	0.2	1.4	1.6	1.6	1.3	0.8	—	—	—	—
D. 158/41	—	—	—	—	0.3	0.4	0.6	0.5	—	—	—	—
D. 62/43	—	—	—	—	—	0.3	0.4	0.6	—	—	0.2	—
B. 4362	—	—	—	—	—	0.5	2.0	4.5	4.6	4.2	2.6	2.2
D. 37/45	—	—	—	—	—	—	0.3	0.5	0.6	0.4	0.1	0.3
B. 46378	—	—	—	—	—	—	—	—	0.6	0.6	0.6	0.3
B. 47225	—	—	—	—	—	—	—	0.8	5.0	5.0	4.9	4.3
B. 47258	—	—	—	—	—	—	—	—	0.7	2.6	5.6	7.3
B. 47379	—	—	—	—	—	—	—	—	0.5	0.5	0.5	0.5
Pindar	—	—	—	—	—	—	—	—	1.7	2.3	2.5	2.4
B. 4373	—	—	—	—	—	—	—	—	—	0.3	0.2	0.2
B. 45137	—	—	—	—	—	—	—	—	—	—	—	0.4
B. 47419	—	—	—	—	—	—	—	—	—	—	—	0.4
B. 49119	—	—	—	—	—	—	—	—	—	—	—	0.2
Other Varieties	2.1	1.6	1.1	1.3	1.2	1.0	1.4	1.0	2.9	2.7	2.3	2.1

TABLE VIII.—**Cycle Age of the Crops.**

Category.	Percentage.									
	1951.	1952.	1953.	1954.	1955.	1956.	1957.	1958.	1959.	1960.
Plants ..	28.8	27.8	26.1	25.0	26.1	27.9	25.1	19.7	13.4	11.9
1st Ratoons	28.2	23.4	23.9	25.1	23.9	24.5	24.8	22.5	18.3	13.0
2nd Ratoons	24.4	23.7	22.4	23.0	24.1	23.3	23.7	22.8	21.7	18.0
3rd Ratoons	15.1	18.8	18.2	17.8	18.6	17.1	16.5	19.9	20.7	19.4
4th Ratoons	3.0	5.4	8.5	7.4	5.0	5.1	7.3	9.6	15.6	17.8
Old Ratoons	.5	.9	.9	1.7	2.3	2.1	2.6	5.5	10.3	19.9
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

The trend continues for higher percentages of the acreage to be retained as old ratoons. The lower costs of cultivation of ratoons coupled with the strong ratooning ability of the cane varieties now grown encourage this practice. The possible ill effects of too low a percentage of plants under unfavourable climatic conditions has been noted previously.

The ratooning ability of the more popular varieties cultivated in recent years is well shewn by the percentage of the original plants which were retained as fourth ratoons in 1959 as follows.

TABLE IX.—**Percentage of Original Plant Cane Acreage Retained as Fourth Ratoons in 1959.**

Variety.	Percentage.
B.41227	80.6%
B.37161	71.4%
B.4098	57.4%
B.4362	41.1%

The plant cane acreage from which the 1959 fourth ratoons of B.47258 were derived is too small for the data on this variety to be sufficiently reliable.

6. **Fertilizers.** The quantities of, and the expenditure on, the various fertilizers used on the sugar estates in British Guiana for the years 1957, 1958 and 1959 are presented in Table X.

The application of nitrogen in the form of sulphate of ammonia is applied in general at the usual standard rates. Supplementary applications in the form of sulphate of ammonia (manual application) and of urea (applied by spraying using 'planes) are based on the results of foliar diagnosis.

A considerable acreage continues to receive phosphate although following correction of the most serious deficiencies the rates per acre have been reduced.

The acreage receiving potash has been increased considerably although still small in relation to the total acreage under cane.

The tonnage of Limestone applied in 1959 is slightly above that of the two preceding years.

TABLE X.—Values and Quantities of Fertilizers used on Sugar Estates, 1957 – 1959.

Ammonium Sulphate.		Superphosphate.			Hyperphosphate.			Muriate of Potash.			Limestone.			Urea.			Di-ammonium Phosphate.		
1958.	1959.	1957.	1958.	1959.	1957.	1958.	1959.	1957.	1958.	1959.	1957.	1958.	1959.	1957.	1958.	1959.	1957.	1958.	1959.
19,478	19,800	2,738	1,685	1,171	3,700	1,668	1,538	1,930	2,837	3,541	11,700	11,369	13,085	488	1,004	1,022	1,100	858	737
1,964,875	1,801,103	448,709	274,123	184,690	321,835	128,800	114,586	215,209	297,859	331,977	295,605	281,198	318,954	114,582	236,542	229,132	301,763	234,749	193,831
100.88	90.96	163.88	162.68	157.72	86.98	77.22	74.50	111.51	104.99	93.75	25.27	24.73	24.38	234.80	235.60	224.20	274.33	273.60	263.00
50.1	48.4	6.8	4.3	2.9	9.2	4.3	3.8	4.8	7.3	8.6	29.2	29.2	32.0	1.2	2.6	2.5	0.3	2.2	1.8
57.5	56.7	11.5	8.0	5.8	8.3	3.8	3.6	5.5	8.7	10.5	7.6	8.2	10.1	2.9	6.9	7.2	7 8	6.9	6.1

REPORT ON THE SUGAR EXPERIMENT STATIONS FOR THE YEAR 1959.

SUGAR EXPERIMENT STATIONS' COMMITTEE.

The following members formed the British Guiana Sugar Experiment Stations' Committee for the year :—

The Director of Agriculture	*Chairman.*
Mr. R. R. Follett-Smith	*Messrs. Bookers Sugar Estates, Ltd.*
Dr. H. Evans	*Messrs. Bookers Sugar Estates, Ltd.*
Mr. J. Baxter	*Messrs. Bookers Sugar Estates, Ltd.*
Mr. A. G. Harley	*Messrs. Sandbach Parker & Co., Ltd.*
Mr. E. S. Douglas	*Secretary.*

RESEARCH SUB-COMMITTEE.

The personnel of the British Guiana Sugar Experiment Stations' Research Sub-Committee for 1959 was as follows:—

The Director of Agriculture	*Chairman.*
Dr. H. Evans	*Messrs. Bookers Sugar Estates, Ltd.*
Mr. A. G. Harley	*Messrs. Sandbach Parker & Co., Ltd.*
Mr. L. S. Birkett	*Sugar Agronomist, British Guiana Sugar Producers' Association.*
Dr. H. Paul	*Superintendent, Central Agricultural Station, Department of Agriculture.*
Mr. C. P. Kennard	*Entomologist, Department of Agriculture.*

STAFF OF SUGAR EXPERIMENT STATIONS.

L. S. Birkett, D.I.C.T.A., A.I.C.T.A.	*Sugar Agronomist.*
C. Cameron	*Field Manager.*
H. I. Gomes	*Field Assistant.*
R. Dookun	*Field Assistant.*
L. French	*Field Assistant.*
S. Phillippe	*Field Assistant (to March).*
S. Singh	*Field Assistant (from April).*
K. Chung	*Statistical Assistant.*
S. Mangra	*Laboratory Assistant.*
S. Buchanan	*Typist.*

PERSONNEL CHANGES, LEAVE ETC.

Mr. S. Phillippe resigned at the end of March and Mr. S. Singh assumed duty as 4th Field Assistant on the 1st of April.

Mr. L. S. Birkett relinquished the post of Sugar Agronomist at the end of December to assume duty as Chief Sugar Technologist, Bookers Sugar Estates, Ltd.

	Long Leave.	Annual Leave.	Sick Leave.
Mr. L. S. Birkett ..	29.7.59—29.11.59	—	—
Mr. C. Cameron ..	—	4.2.59—20. 2.59	24.6.59—31. 7.59
Mr. H. Gomes ..	—	19.9.59— 4.10.59	—
Mr. R. Dookun ..	1.5.59—31. 7.59	—	—
Mr. L. French ..	—	16.6.59—29. 6.59	—
Mr. S. Phillippe ..	—	3.2.59—16. 2.59	—
Mr. K. Chung ..	—	1.10.59—17.10.59	—
Mr. S. Mangra ..	—	2.2.59— 9. 2.59	—
Miss S. Buchanan ..	—	—	10.9.59—18.10.59

EXPERIMENTS.

During the course of the year, seventy-nine cane variety experiments, one cultivation *cum* variety experiment, and two experiments with limestone were reaped. The results of these experiments have been fully reported elsewhere in this Bulletin.

SEEDLINGS INTRODUCED, ETC.

The following Cane Varieties were received from the Central Cane Breeding Station, Barbados, for yield tests :—

B. 1957 Series. B.5712, B.5736, B.5743, B.5744, B.5745, B.5787, B.5789, B.5791, B.57133, B.57138, B.57141, B.57146, B.57150, B.57156, B.57170.

B. 1958 Series. B.5815, B.5851, B.5867, B.5868, B.5870, B.58116, B.58132, B.58136, B.58149, B.58150, B.58157, B.58174, B.58176, B.58199, B.58206, B.58228, B.58229.

B. 1959 Series. B.5912, B.5921 to B.5973, B.5975 to B.5989, B.5991 to B.59139, B.59147 to B.59239, B.59241 to B.59251, B.59254 to B.59259.

In addition "fuzz" was received from the Central Cane Breeding Station, Barbados, from which 23,524 seedlings of the D.B. 1958 series were planted out in nurseries.

Crosses made at Sophia produced 1,755 seedlings which were also planted out in nurseries during 1959.

The position in respect to varieties under test and undergoing multiplication in 1959, is presented in Table I.

TABLE I.

Varieties under Test and Undergoing Multiplication, Etc., at December 31st, 1959.

Year	Barbados.		Demerara.		Other Countries.	
	In Test	Under Multiplication.	In Test.	Under Multiplication.	In Test.	Under Multiplication.
Prior to 1940	—	—	—	1	22	26
1942	1	1	—	—	—	—
1944	—	—	—	—	3	3
1945	—	—	—	—	—	2
1946	1	1	4	3	—	—
1947	—	—	—	—	1	1
1949	—	3	—	—	—	—
1950	8	8	—	—	1	1
1951	8	6	—	—	—	—
1952	25	18	8	8	—	—
1953	17	15	*5	*12	—	—
1954	19	19	**40	**10	—	—
1955	16	17	**55	**52	—	—
1956	—	4	**35	**71	1	1
1957	52	169	—	—	1	1
1958	—	201	—	—	—	—
TOTALS	147	462	147	157	29	35

* Demerara–Barbados Seedlings.
** Demerara Seedlings (7), Demerara–Barbados Seedlings (43).
** Demerara Seedlings (36), Demerara–Barbados Seedlings (71).
** Demerara Seedlings (24), Demerara–Barbados Seedlings (82).

FINANCE.

The sum of $77,435.00 was voted from the funds of the Sugar Experiment Stations' Committee for the operation of the Station during the year. The total expenditure in 1959 amounted to $70,563.10.

Receipts from assessments for the year amounted to $39,826.93; those from the sale of canes to $29,632.26 and miscellaneous receipts to $661.47, while a balance of $14,301.34 was brought forward from 1958.

The quantity of canes sold in 1959 was 3,581 tons.

MISCELLANEOUS.

The Sugar Agronomist attended the Tenth Conference of the International Sugar Cane Technologists' Association which was held in Hawaii during May, 1959.

TABLE II.—**Statistics of Seedlings, Cane Distribution, Field Experiments, Cane Samples, Cane Sold and Visits Paid to Estates, 1950 – 1959.**

Year.	Seedlings Basketed.	Cane Cuttings Distributed.		Field Experiments.		Cane Samples.		Cane Sold to L.B.I. Estate.		No. of Visits to Estates.
		No. of Cuttings.	No. of Bags.	Started.	Harvested.	No. Taken and Analysed.	Cane Crushed (Tons).	Deliveries (Tons).	Net Receipts. $	
1950	—	105,720	1,762	18	65	719	24	3,135.25	20,080.18	154
1951	—	123,540	2,059	14	71	654	22	3,344.50	24,443.64	89
1952	58*	174,420	2,907	32	62	1,102	30	2,794.20	22,274.61	80
1953	1,133**	104,640	1,744	27	63	1,015	37	3,345.20	31,255.78	88
1954	8,797‡	132,120	2,202	33	80	1,076	31	3,524.49	28,698.86	82
1955	3,149‡‡	139,200	2,320	29	86	1,680	44	3,488.40	28,561.15	83
1956	4,815‡‡	79,620	1,327	29	91	1,903	48	3,078.50	25,908.13	70
1957	17,060‡‡	106,110	1,768	26	103	2,100	55	2,962.65	28,671.62	78
1958	15,316‡‡	97,320	1,622	24	90	2,013	48	3,689.00	29,383.56	62
1959	27,379‡‡	122,880	2,048	32	81	1,438	43	3,581.46	27,679.57	53

1952 *Demerara Crosses.
1953 **Mauritius "Fuzz".
1954 ‡Barbados "Fuzz".
1955 ‡‡Barbados "Fuzz" (2,982) and Demerara Crosses (167).
1956 ‡‡Barbados "Fuzz" (3,928) and Demerara Crosses (887).
1957 ‡‡Barbados "Fuzz" (15,307) and Demerara Crosses (1,753).
1958 ‡‡Barbados "Fuzz" (13,578) and Demerara Crosses (1,736).
1959 ‡‡Barbados "Fuzz" (24,977) and Demerara Crosses (2,402).

The Experiment Station was visited by a party of Students from the Imperial College of Tropical Agriculture, Trinidad, under Dr. P. N. Wilson.

The Station was also visited by several persons from abroad and by those connected with the local sugar industry. Amongst the visitors from abroad were: Mr. L. Auger of Martinique and Mr. P. Rountree of Mauritius.

Statistics for recent years pertaining to the number of field experiments laid down and harvested, cane cuttings distributed, samples analysed, etc., for the period 1950—1959, are presented in Table II.

ACKNOWLEDGEMENTS.

As in the past, close contact was maintained between the Industry and the Staff of the Sugar Experiment Station.

The cordial co-operation of the Staff of the Sugar Estates and of the Sugar Experiment Station is very gratefully acknowledged.

L. S. BIRKETT,

Sugar Agronomist.